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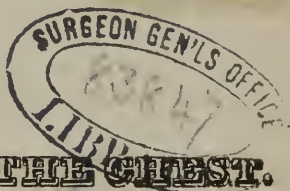


A

PRIZE ESSAY

ON

DISEASES OF THE CHEST.



BY DR. A. KEISER.

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Lewistown, Pa.

1835.

To the "Union Medical Society," this work is affectionately inscribed.

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PREFACE.

In offering this work to the publick, we are disposed to state, that when we concluded to write an essay on diseases of the chest, we felt very sensibly the responsibility and arduous nature of the task ; it being a subject very complicated, as well as highly interesting in its nature. However, from the sense of the utility of the undertaking, (it being calculated to bring about a retrospective contemplation of a pretty active practice, in a country peculiarly incident to diseases of the pulmonary apparatus, as well as an engagement in the honorable and profitable enterprize of research) we commenced the undertaking, with a determination not to give it up ; and perseveringly devoted day and night for the length of six months, before we were willing to present it to the Medical Society for examination. After the premium being awarded, we were induced, by the solicitation of some of our medical friends, to publish it to the world. Without proceeding any further by preliminary remarks, we would state, that the plan, laid down in the arrangement and nomenclature of the parts contained in this dissertation, is different from any, perhaps, that has been published on the same diseases. According to the customary mode of medical writing, physiology and pathology are entirely forgotten. Now it is well known, that to investigate

the structure and healthy action, as well as the morbid excitement of any organ of the human system, is of primary importance, and a fundamental truth by which we should be governed in discerning, distinguishing, preventing and curing diseases. Without the knowledge of this fact, we are, to a great degree, groping in the midnight mist, or following the blind and uncertain rule of chance. In the exhibition of the physical signs of diseases of the thoracic viscera, in consequence of little chance of post mortem examination, the country practitioner is deprived of a grand source of inspecting the morbid changes of structure and action, as the result and issue of disease. Acknowledging our practical information, on this part of the subject, to be limited, we must be contented with collecting our principal views and opinions from the writings of Corvisart, Senec, Testa, Burns, Bertin, Piorry, Arnold, Andril, Laenec, Williams, and others; endeavoring to give all the important and necessary information on this subject in as condensed a form as possible. There is one thing, which we would beg leave to remark, which is generally altogether overlooked, and which we consider of immense value and importance to the physician, in the detection of internal diseases; that is, the direct inspection of the external surface of the body. How often have plain and obvious cases of disease been entirely mistaken and maltreated, for months and even years, merely from the practitioner neglecting this simple but necessary measure! In every case of disease, whether its seat be

in the trunk, head, or extremities, we ought to examine the suspected part, freed from covering, (at least so far as is necessary to carry on the examination) always by the hand, and often by the eye; and however repugnant our patients may be to the measure, we should endeavor to overcome their aversion, by a satisfactory representation of its importance and value. From the neglect of this precaution, diseases of the heart may be mistaken for diseases of the stomach: inflammation of the bowels and stomach, for colic; and cramps and external morbid action arising from curvature of the spine, tumours, and external derangements, as the result of the ordinary exciting causes. We may here notice another branch of the same mode of investigating diseases; and that is, the necessity of strictly examining all discharges from the natural passages of the body. In such cases we should be careful not to place too much reliance on the reports of patients or their attendants; as they are often mistaken with respect to the quality and quantity of the excreted matter. Disorders of the alimentary canal, and even of the lungs, are often misunderstood for want of attention to the character of their secretions. In a word, the more closely we can trace the symptomatic derangements to their source, in every part of the body, the more likely are we to understand the real nature of disease; and the less liable are we to be misled by the numerous sympathies, which, in almost every disease, constitute a prominent part among the more obvious phenomena. Our adoption of the arrangement and

nomenclature of the diseases to be considered, is we acknowledge, somewhat different from any heretofore published ; yet we claim at least some share of attention for our perspicuity, and condensity of classification, which not only comprises, but greatly simplifies, and more clearly distinguishes all the varieties and forms of diseases included in this work. In the history of diseases of the pulmonary apparatus, we shall, in the first place, consider the affection of those tubes, which lead into the lungs, termed *bronchiæ*, which will comprehend all the inflammatory excitement peculiar to those vessels.

We will next consider *pleuritis*, it being the most regularly in order with the preceding. The varieties of *acute* and *chronic* will be discussed at considerable length ; and especially the chronic form of the disease, which is frequently overlooked, or not distinguished, until the tissue becomes either disorganized, or depraved in its action in an irreparable manner. This disease is often mistaken, and viewed as an affection of the liver, spleen, or lungs ; and sometimes from its insidious nature, so far neglected, as to be pronounced nervous or slightly spasmodic. The other affections of the pulmonary organs will next be discussed. These are included under the heads of *acute* and *chronic Pneumonitis*: this will comprehend all the morbid changes of the lungs, in the variety of diseases to which these organs are incident. We shall give the varieties, the symptoms, the diagnosis, the prognosis, termination, post mortem appearances, causes, prevention and cure,

of those diseases. The treatment to be reserved to the last. Having passed through the diseases of the pulmonary apparatus, we shall conclude by giving a general outline of the principal phenomena, exhibited in organic and functional derangement of *the heart*, and some of its particularities. And here we would remark, that the deranged action and morbid variations of this important viscus are perhaps as little attended to by physicians generally, as any other prominent organ of the body. And when we consider that there is no disease, to which the human frame is incident, which occasions such mental and bodily sufferings as organic and functional disorders of the heart, it becomes us, as we value the lives and happiness of the human race, to render ourselves fully acquainted with the greater and lesser deviations from health of that organ; which is the central point from which all the vital action, through the medium of the circulation, is communicated to the system. The different changes and terminations, of the diseases contained in this work, shall be verified by the relation of cases, from the authority of highly distinguished practitioners, as well as from our own practice.

ESSAY.

Estimatio causae saepe morbum solvunt.—CELSUS.

FELLOW-MEMBERS OF THE UNION MEDICAL SOCIETY :—In looking over the Lewistown papers sometime last June, I observed that a resolution was passed at the last meeting held in Huntingdon; to this purport : offering “A premium of fifty dollars worth of medical books, to be awarded to the person, who should furnish the best essay on diseases of the chest.” On reflection, I viewed this subject proposed, as highly important, as well as very complicated in its nature ; and requiring much study and examination in its general texture, as well as its minute determinations ; and, that whoever would engage in this enterprize, must consider it both arduous and comprehensive. I therefore, in the midst of those views and feelings with respect to it, concluded that, if I should undertake the task, (however inadequate I would be to do justice to an essay of this kind,) it would not, at all events, be mispent time.

As but few preliminary remarks are requisite, I shall immediately commence the subject ; and in laying down the premises, by which I shall be regulated and

directed, in the composition of this essay, the following plan shall be adopted : We will consider it in its Physiological, Pathological, Diagnostic, or Physical examination; Symptomatalogical, and Therapeutical states.

The *thorax* will now be considered as a long case, placed between the neck and abdomen. It resembles a cone flattened ; and contains the important vital organs—the heart, large vessels, and lungs. By its construction, it is made to subserve for the defence of these viscera against injuries ; for free movements necessary in the performance of respiration ; and to accommodate itself to the motions of the body. The Thorax is composed of the dorsal vertabræ,* behind, the ribs on the side, and of the sternum† before. To these are added, the intercostal muscles, and the diaphragm. The lungs occupy the greatest part of the cavity of the thorax ; and to each of them is appropriated a membrane or sac, called pleura. This membrane is continued over the surface of the lungs and thorax, and lines them. The pleura extends one on each side of the thorax and are called bags ; the contiguous faces of which form a *septum*, which extends from the sternum in front, to the spine behind ; and from the upper part of the thorax to the diaphragm, forming the anterior and posterior mediastinum. The lungs may be regarded as consisting essentially of innumerable divisions and ramifications of the trachea : after entering the thorax, the trachea divides behind the arch of

*The twelve bones of the back. †The Breast.

the aorta, into two branches, that take the name of *bronchiæ*; one of which passes to each lung. The infinite ramifications and subdivisions of the bronchial tubes terminate in closed extremities or culdesacs, forming the pulmonary vesicles or air cells, of which the lungs appear almost entirely to be formed.

The bronchi are formed of fibrous, of cartilaginous, of muscular, and of mucous tissues; which last lines the interior. Another element of the pulmonary structure is blood-vessels. They consist of arteries, veins, and capillaries, and are of two orders,—the pulmonary arteries and veins appropriated to the respiratory offices—and the bronchial arteries and veins destined to the nutrition of the pulmonary tissue. The pulmonary artery, like the aorta, is a vessel of supply, communicating with the pulmonary capillaries and bronchial mucous tissue, into which it transmits the humour or fluids of absorption, and in which is effected the process of hematosis or sanguification. The pulmonary capillaries form an immensely ramified network, connected most intimately with the mucous membrane of the bronchiæ. The two constitute the principal portion of the pulmonary parenchyma. The pulmonary veins receive the blood from the pulmonary capillaries, and bronchial mucous tissue, and conduct it (after experiencing the changes induced by the respiratory process) to the left heart; whence it is sent into different portions of the economy for the purposes of nutrition, secretion, and the support of vital action. The bronchial arteries and veins are important ele-

ments of the pulmonary structure. They are spread over the exterior surface of the lungs, forming a complicated plexus. The lungs also have their appropriate nerves. They announce, through their sensation, to the lungs the intelligence of the want of respirable air. Such is a general view of the anatomical elements forming the structure of the lungs. This structure is arranged into lobes, lobules, and air cells or vesicles. No direct communication exists between these, or between the air cells or pulmonary vesicles; each of which has its parietes, and is kept separate from the others by cellular tissue. This explains the frequency of the partial affections of the pulmonary viscera.

It will now be proper to investigate the mechanism by which the chest enlarges or contracts; many of the phenomena of respiration being intimately connected with this process. Respiration will then be defined, the alternate ingress of air into, and egress from those organs; and in order to carry on this process, it is necessary that the dimensions of the chest be enlarged. The chest may be dilated vertically, laterally, and from before backwards. Various opinions have been advanced from the physiological writings of Haller, Sabatier, and others, with respect to the physiological action of special muscles engaged in the motion of the chest. But in the midst of their contrasted opinions, they all agree that the diaphragm* is the chief organ employed in dilating the chest, and carrying on respi-

•A large muscle of the chest.

ration. In health the chest dilates only by the descent of the diaphragm; but when it is necessary to take into the chest a great quantity of air, it is not sufficient that it should be enlarged merely by the descent of the diaphragm; it is required besides, that its dimensions should be increased in every direction. The intercostal muscles* must then contract, and tend to bring together the ribs between which they are placed; as well as several other muscles belonging to the thoracic and abdominal viscera. This enlargement is called inspiration, and exhibits three well marked degrees: First, *ordinary inspiration*, which is by the depression of the diaphragm, and almost insensible elevation of the thorax:† Second, a *deep inspiration*, in which the elevation of the thorax is evident, at the same time that the diaphragm is depressed: Third, *forced inspiration*, in which the dimensions of the thorax are augmented in every direction that the physical disposition of this cavity permits. To the dilatation of the thorax succeeds expiration; that is, the return of the thorax to its ordinary position and dimensions. The mechanism of this motion is precisely the reverse of that which we have just described. As it then appears that respiration is an ingress of air to, and egress from the lungs, in order that it may arrive at the glottis,‡ in inspiration, or pass out from it in expiration, it will sometimes traverse the nasal fossæ, and sometimes the mouth. With respect to the number of in-

*Muscles between the ribs.

†Chest.

‡Top of windpipe.

spirations made in a given time, it differs essentially in different individuals. Hale states that there were twenty in the space of a minute. A man upon whom Menzies experimented, breathed but fourteen times in a minute. Sir Humphrey Davy asserts, that he respired twenty-six or twenty-seven times in that space. Mr. Thompson says his ordinary breathing is nineteen times in a minute. Taking twenty then as the medium, we shall have 28,000 inspirations in twenty-four hours. From this view of the subject, we discover the action and structure of the pulmonary organs, in a state of health, and draw the inference, that in consequence of the great number of vessels, which penetrate through the substance of the lungs, the constant exposure of these organs to the air we breathe, their continual dilatation and contraction in the mechanism of respiration, we need not be astonished that they are so frequently the prey of disease, and among the most serious and difficult the physician is called to. So long then, as inspiration and expiration are regular, they cannot give rise to any pathological condition. They are but the modification of these movements, which are capable of producing it, which are to be investigated in the voice, speech, singing, laughing, sighs, sobs, coughing, and sneezing. These modifications of respiration, by irritating the trachea,* and bronchiæ,† frequently give rise to inflammation,—which may occur in the mucous membrane, in the mus-

*Windpipe. †Air tubes.

cles of the larynx, and the fibrous tissue of the trachea or bronchial canal. These diseases, however, we are happy to say, from the experience we have had in their management, can, in their incipient state, be very easily arrested. We have had frequent cases of this kind under our care, and can confidently proclaim our opinion. But on the other hand, we can as boldly assert, as well from our own practical knowledge, as from the warranted evidence of eminent physicians, that if attention is not paid to these cases, and they are allowed to make progress, they then become the cause of fatal disorganization. The larynx also, being irritated and fatigued by too much speaking and singing, becomes frequently the cause of *angrina pectoris*. Laughing, and sobbing are irritating to the substance of the lungs and air passages. They retain the blood in them ; as do also forced cries, and efforts of singing, and lay the foundation for pulmonary congestions and hemorrhages. These modifications of the respiratory process act likewise on the heart, irritate, and may consecutively phlogise and dilate it. The convulsions of laughing and sobbing may become excessive and habitual, and be converted into diseases, for they determine the blood towards the head, which may consequently suffer from accumulations, phlegmasia, rupture of the vessels, and sanguineous exhalations. The other modifications of respiratory action jar very much the trachea, and render it painful. These are coughing, and sneezing, and always caused by a primary or sympathetic irritation of the mucous

surfaces traversed by the air in the act of respiration. They create a vacuum in the pulmonary vesicles, and cause an afflux of blood, which engorges and inflames them, so as to require new efforts, by which the tickling, that provokes these convulsive expirations, is still more increased. Hence patients affected with bronchitis should be entreated to restrain the inclination to cough, and only to yield to it when necessary, and that occurs when the mucus is accumulated in the bronchial cavities; and then the expectoration is generally easy. There are certain diseases, which provoke sympathetically the desire to cough, without there existing any bronchial inflammation, or the least mucus to be expectorated. For instance, this is displayed evidently in certain gastritis; and if this desire to cough is encouraged, it adds to its frequency and violence, and at length produces an inflammatory fluxion in the bronchial vessels; chronic pneumonitis comes on, and predominates over the gastritis. This, we presume, has been observed in the practice of many of the members of this society: and not only the irritation of inflammation giving rise to sympathetic diseases of the bronchial vessels, and lungs, but the irritation accompanying other diseases originating in the stomach, such as dyspepsia, and the different febrile diseases incident to the system. Sneezing expels a larger quantity of air from the lungs than coughing; and the afflux of blood and mucus to the bronchial cavities and the vesicles, is the principal cause of the propagation of catarrh from the nasal fossæ into the lungs.

Sneezing is not less irritating to the nasal fossæ ;* and the more it is yielded to, the more is the feeling that provoked it exasperated, and the greater the fullness of the fossæ. Inflammation in the air cells and cavities of the lungs, may be caused by inspiration of deleterious particles in the air, or of irritating vapours, mineral vapours, chlorine, ammonia, acids in a state of expansion—such as the sulphurous irritating powders ; as also those arising in the pulverization of tobacco, euphorbium, squills. Smokes of different kinds, and odours, act also on the mucous membrane of the bronchiæ, and occasion coryza and bronchitis. Asphyxia, and inflammation of the bronchial surfaces may be brought on by foreign bodies, which are received into the lungs through the medium of the atmosphere, and by filling and irritating the air cells, impede the aeration of the blood. When the inspired air is deprived of its oxygen, the aeration of the blood does not take place, and consequently it is inimical to life. There are some gases which are injurious only by the want of oxygen ; such are hydrogen, oxide of carbon, azote, and its protoxide, and carbonic acid. Unmixed they produce asphyxia. But there are others which produce real poisoning, by striking directly at the nervous system ; such as phosphoretted, sulphuretted, and arseniated hydrogen, the vapour of the hydrocyanic acid, and the misasmata arising from animal and vegetable decomposition. These gases sometimes pro-

* Passage through the nose.

duce instant death ; or if they do not produce this effect, they at least bring on a state of suspended animation. Although oxygen gas is an element indispensable to life, if it be in excess in the air we breathe, it irritates the pulmonary organs, accelerates the circulation, influences the tissues, and gives rise to fevers. Hence the pure cold air of elevated places, which is abundantly charged with this principle, hurries the progress of chronic inflammation, that tends to the disorganization of the lungs. The most frequent morbid state of the bronchial mucous membrane is its irritation ; but the effects of this irritation are not uniform. It gives origin to very different conditions of the bronchial mucous tissue, and interferes with respiration in various modes. The mucous membrane from its extreme vascularity, becomes turgid and thickened by the augmented afflux of the blood, induced by irritation. This state occurs in the bronchial mucous membrane. The caliber of the smaller bronchial tubes is then exceedingly diminished, or it may be even obliterated, so as to prevent the passage of air to the pulmonary vesicles,—respiration must necessarily be nearly suspended. Suffocation is threatened, and the most violent efforts are made by the respiratory muscles, to enlarge the chest, and inhale air into the lungs. This condition constitutes one of the forms of asthma. Irritation of the bronchial mucous tissue excites in the muscular fibres of the bronchi, spasmodic contraction. In the same manner in others, and by the contraction of the bronchial tubes, asth -

matic paroxysms of suffocative respiration are induced. The exhalent and secretory functions of the bronchial mucous membrane always experience modifications, by its irritation. They are increased in quantity, and suffer various changes in their character. The mucous secretion of the bronchial membrane also suffers various modifications from its irritation : it may generally be known by its not adhering to the vessel containing it. When seated in the bronchial tubes, constituting bronchitis, the secretion is often exceedingly profuse ; to such an extent, sometimes, as to prove rapidly fatal, by the interruption of the respiratory process. This circumstance especially occurs in the bronchitis of old people, children, and the intemperate. In its character the secretion varies from a sero-mucous to a muco-puruloid fluid, and even to pure pus—though unattended with an ulcerated surface. This membrane, from the effect of irritations, often becomes covered with a membranous exudation, the same as that which is thrown out by the laryngeal mucous tissue in croup : it rarely occurs in adults, but is to be apprehended in all the bronchial affections of children. The irritation of this membrane, disposes in many cases to the effusion of blood, which is one of the forms of hæmoptysis. The chronic inflammation of the parenchymatous structure is extended into the bronchial mucous tissue ; and a sanguine exudation results from the congestive afflux induced into it. The bronchial tubes are frequently dilated beyond their normal size, and give rise to pathological signs. This

dilation may extend throughout the whole, or a part, of the ramification. Sometimes a number of these dilations succeed to each other, with slight intervals; and, being filled with mucosities, may be mistaken for tubercular excavations. The parenchyma of the lungs is composed of the finer bronchial ramifications, pulmonary vesicles, cellular membrane and capillary vessels. Irritation of the mucous tissue of the last bronchial tubes, and the pulmonary vessels attracting into them an afflux of sanguine humour, produces congestion; opposing, in the portion where it exists, the exercise of respiration. When this condition prevails to a considerable extent, that function suffers to a degree jeoparding a fatal result. This is the pathological state constituting pneumonitis, or peripneumony; it differs from bronchitis, merely in the portion of the mucous tissue affected; which in pneumonitis, is the mucous membrane of the last ramifications of the bronchial tubes, and the pulmonary vesicles: and in bronchitis, is the mucous membrane of the larger divisions. The first is necessarily accompanied with extreme congestion; while the last is limited in its congestion. Pneumonitis, in its first degree, is attended with augmented secretion of the mucous membrane; and differs from that formed in bronchitis, in being more viscid and tenacious, adhering strongly to the vessel in which it is received. In the second and third degrees, it loses its mucous character, assumes various aspects, is more or less puruloid, bloody and putrid. The parenchyma of the lungs, in the second stage of pneu-

monitis, becomes solid from the persistance of the congestion, and probably a partial disorganization of the blood; this state is designated hepatization of the lungs. From this condition, the lungs pass to a state of softening, or diffused suppuration. The last degree of pneumonitis, is when the hepatized portion is infiltrated with a species of sanious pus.

Inflammation of the parenchyma not unfrequently terminates in gangrene; it is mostly circumscribed, and confined to one lobule of the lung; sometimes it softens down into a putrid sanies, and is discharged by the bronchia, when a recovery is effected. Dr. Jackson has observed this circumstance in two cases.—Sanguine effusion takes place occasionally, into the cellular tissue connecting the pulmonary vesicles; compressing them, in a manner, to obliterate their cavities, and destroy their capacity for the respiratory acts:—this is the state of the lungs in the pulmonary apoplexy. The cellular tissue, entering into the composition of the parenchyma, is intimately connected with the circulation of the lymphatic fluids. Chronic pneumonitis, especially in those of a lymphatic temperament, is extended into the cellular tissue, and affects the lymphatic capillaries, and circulation, causing the secretion of tuberculous matter, a product of lymphatic matter, and modification of albumen. In this first stage, they are disseminated through the parenchyma, in small particles, and do not occasion much embarrassment to respiration; but continuing to increase, new secretion is induced, the air vesicles are com-

pressed, and the lungs rendered solid. Finally, softening down, the tubercular matter is expectorated, leaving cavities of various sizes in the lungs. The parenchyma, under chronic inflammation, is frequently converted into a dense substance, nearly as firm as cartilage, and of a greyish colour. Laennec terms it *tuberculous infiltration*. The cellular tissue of the lungs is sometimes infiltrated with air, the character of its surface is changed, and the fluid serosity lubricating it is modified; consequently the easy movements of the lungs, in their expansion and recession, in the act of respiration, is interrupted; and this function, being embarrassed when both pleura are thus affected, the patient is placed in eminent danger: more especially when the portion lining the diaphragm is involved.

We now come to the heart. The heart is a hollow muscle of a conical shape—it consists of four cavities, two auricles, and two ventricles. The right auricle receives the two great trunks of the venous system, the ascending and descending vena cava. The left auricle receives the pulmonary veins. The right ventricle sends off the pulmonary artery, and the left ventricle the aorta. The cavities of the heart are lined with their appropriate membranes; and on the exterior, the heart is invested by a venous membrane, which is reflected from it at the origin of the vessels, forming a kind of sac enclosing the heart. It is lubricated by a serosity exhaled in its surface. The nerves of the heart are remarkably small. The structure of the

heart is calculated entirely on physical principles, and intended for the developement of a mechanical action on the blood ; its influence in the circulation is solely that of a physical apparatus, similar to a forcing pump in an hydraulic engine ; and it is by its contractility that the circulation is kept up. The heart is influenced by operation through the medium of the nervous system ; its contractions are increased under the influence of the intellectual operations, and of the passions ; and its palpitations are always increased by its participation in the developed irritation of any tissue.-- There is no organ of the body that is affected in a more lively manner, through cerebral emanation, than the muscular tissue of the heart. Pleasure, and the modifications of it, called joy, pain, in all its varieties, whether physical or moral, cause the heart to palpitate with violence. Sometimes, in consequence of the blood not being sufficiently oxygenated, and the heart undergoing a kind of restriction, the blood is retained in this organ, and in the lungs and brain ; hence results a feeling of suffocation, and impending syncope. These phenomena sometimes give rise to sensations of pain in the region of the heart ; more or less extended to the thorax, and epigastrium, and to the arm of the same side ; and to the formation of a disease, called *angina pectoris*. Here then we have two kinds of palpitation : one in which the circulation is accelerated, the other in which the course of the blood is retarded. When these two kinds are kept up for a length of time, they finally fix the imitation in the tissue of the heart,

and give rise to disorders. As irritation of the heart is the fundamental phenomenon of fever, no person can be surprised, that this viscus retains, and appropriates to itself, the irritation which it first experienced only sympathetically ; and that consequently, it becomes diseased in those, who often suffer from inflammation carried to the extent of causing fever. Thus we find, that irritation, under the form of pleasure, or of physical or moral pain, and inflammation even without pain, often act on the heart with such intensity as to alter its normal state by becoming fixed in its tissue. We hence learn, why diseases of the heart succeed various phlegmasia, whether acute or chronic. Disorders of the heart also arise from the too precipitate and violent actions of the muscles ; and they are still more readily produced, if the exercise be taken in an ascending direction ; for in this case, the chest is made the point of support for all the locomotive muscles.--To accomplish this, we suspend respiration ; the lungs are therefore of necessity engorged, and refuse (in part) passage to the blood, sent to them by the right ventricle. Whence results a permanent fulness of the two right cavities of this viscus, which may thus contract a fixed irritation. If to this state we add the constriction, which, in place of expanding to receive the blood, is contracted, and retains it in its auricles, we shall form an idea of the facility with which this organ remains permanently irritated. Tickling, carried to excess, always produces analogous effects.--To all these evident causes of disease we must add

another, not less so : I mean external violence, as by blows over the region of the heart, violent jars, and falls, permanent pressing and crushing ; and finally, the sudden action of cold must also be placed on the list of the most frequent causes. We now see how numerous are the accidental causes of the irritation of the heart. When this viscus is more than ordinarily irritated, constituting the disease called pericarditis, the diastole is incomplete, the heart receives less blood than in its normal state, and consequently this fluid must be stagnated in the viscera ; hence a feeling of oppression follows the result of a difficult transmission of the blood through the lungs, producing deficient oxygenation, and a fearful apprehension of suffocation and syncope. This oppression is redoubled on the slightest motion, and the contraction of the inspiratory muscles necessarily adds to the oppression. If acute pericarditis continue for some days, with the same intensity, death is the necessary consequence of the two cases conjoined—the defective circulation, and the deficient oxygenation. When irritation occupies the internal surface of the ventricles, the opening into the arteries being more easily contracted in diameter, than those which admit the blood into the auricles, this fluid enters with facility into the ventricles, but is discharged with difficulty ; hence results palpitation ; during which, the heart, extremely large and tumid, strikes with violence against the parietes of the thorax. In such cases the patients are perpetually harrassed by the difficulty of breathing, and of walking. When

the irritation of the internal surface of the heart is not predominant at the arterial orifices, the force of the pulsation of the arteries corresponds with that of the heart. The same thing takes place, when irritation exists only in the fleshy tissue of the organ. These two states necessarily bring on hypertrophy, with a free course of the blood through the four cavities.—The heart then contracting, with much more frequency and force than in its normal condition, and the blood which traverses it meeting with no obstacle, the viscera always are powerfully stimulated; and the respiration is full, and strong, and performed with a kind of hissing noise, called *puerile*. With a full, frequent and hissing respiration, in persons labouring under hypertrophy, without organic obstruction, is always associated a great heat in every part of the body. Such as we have described them, are those individuals attacked by hypertrophy of the heart, without pain, and obstruction to the course of the blood.—They are liable to many diseases. The too violent impulse of the blood on the brain exposes them to profuse nasal hemorrhages, cerebral congestions, epilepsy and apoplexy. In the lungs, the same impetus exposes them to sanguineous congestions, which, like those of the brain, are brought on by violent passions, over-running, undue exertions, venereal excesses, stimulating ingesta; and are announced by pneumonitis, hæmoptysis, or fits of asthma;—and if the necessary precautions are not observed, the heart at length becomes disorganized.

Perpetual obstruction to the course of the blood naturally exist, in all cases in which the heart is softened, dilated, weak or hardened, or its proper arteries ossified. These obstacles give rise to dyspnoea,* oppression, and a fear of suffocation. They also give rise to a congestion of blood in the venous apparatus of the viscera, livid countenance, an intolerable cough, and mucous expectoration; wakefulness, and even the impossibility of circulation, and locomotion; gastritis, and finally, general dropsy; under which last these unfortunate beings generally sink. In order to explain the extreme oppression brought on by exercise, we must remember, that by muscular contraction, a greater quantity of blood is propelled toward the heart than usual, and consequently, the heart having lost its energy, is incapable of extricating itself from this increase of blood—hence an augmentation of dyspnoea.

We now come to the Diagnostic or Physical examination of diseases of the chest. There have been, in various countries and ages, two leading modes of examining patients, with a view to detecting and identifying diseases, previously to undertaking to relieve them. These have been distinguished as the physiological, and physical. The one consists in observing and comparing those symptoms, of which the patient complains, or of which the physician can collect, by asking him questions, or viewing his actions, or ex-

*Difficult breathing.

pression of countenance. The other, on the contrary, consists in changes of structure, arrangement, density or size of parts ; and possesses much certainty of discrimination. They are in general simple facts, addressed to the senses of the practitioner ; and any one who possesses the ordinary acuteness of intellect is capable, after an adequate study of the subject, of ascertaining the existence and extent of physical phenomena, with a degree of satisfaction and importance unexampled. In order then to avoid embarrassments and confusion in the discussion, we will, as far as possible, endeavour to restrain ourselves from entering the bewildered maze of false or vague classification. We will strive to shun unnecessary descriptions ; and consequently pay as rigid regard to appropriate and comprised arrangement, as our limits will permit ;—and as our practical knowledge, with respect to diagnosis, is but circumscribed, we will have to collect our principal views, or opinions, from the writings of Corvisart, Senac, Burns, Testa, Bertin, Pierry, Arnold, Andral, Laennec, Williams, and others ; endeavouring to give all the important and necessary information on this subject, in as condensed a form as possible. .

The first step, in a complete physical examination of a disease of the chest, is the direct inspection of the the external surface of the thorax—a thing strongly recommended in all serious cases, where propriety admits of its performance. In the female this is impracticable,—yet an approximation to it may be had, by examining the thorax through a light dress closely

applied to its surface, and by inspecting the neck.—The utility of this inspection, independent of other revelation, is of high importance. We sometimes detect distortions of the chest, indicative of serious disease. In two numbers of the Medical and Surgical Journal, are related two cases ; one of which had been treated for asthma, by a practitioner of high authority, when, upon the accidental exposure of his person, behind the first bone of the sternum,* was found a large tumour, of considerable solidity, which proved to be an aneurism of the arch of the aorta ; the sac was nearly as large as a man's fist, and had evidently been the cause of the projection of the first bone of the sternum. For a more full account of this case, see North American Medical and Surgical Journal, No. 15, page 66. In the other case, a slight projection of the upper bone of the sternum, noticed on stripping the corpse, was found to be produced by a large aneurismal tumour. See North American Medical and Surgical Journal, No. 16, p. 286. Many other cases might be cited to prove, the importance of this examination ; but enough has been said.

After a preliminary inspection of the thorax, we are next to ascertain, whether all its parts, and both its sides, expand and contract equally during respiration ; for which purpose the patient must make a deep inspiration. In doing this, pain is frequently detected. It is also necessary to note the rhythm and celerity of the

*Breast bone.

movements of respiration. Increased rapidity of the motion performed in breathing, denotes an increased aeration of the blood, or diminution of the space in which this is performed. The first of them arises from muscular exertion, and from inflammatory diseases. The latter, from a diseased condition of the lungs, the presence of fluid, &c. What is called high respiration, or that in which the thorax is more distended than common, arises from the presence of tumours or fluid ; from inflammation ; from the distention of the stomach or liver ; or, from enlargement of the lungs, as in emphysema. Any peculiarity of the visible pulsation of the heart, is next to be noticed ; and any perceptible inequality of the two sides of the thorax. Measurement by a tape will exhibit this last fact, with a considerable degree of certainty, and accuracy. In judging of the organic situation of the pain, from the locality pointed out, we apprehend error is not unfrequently committed. The common complaint of pain in the breast, or in the stomach, by an individual, is, we believe, frequently taken as a correct statement, without examining into the anatomical nature, or situation, of the parts ; or considering the ignorance of patients, in whose vocabulary, breast frequently means stomach ; and stomach, small intestines ; while in the female sex, side often means the region of the ovaria. Ask the fever patient, who is affected with a short, dry, but troublesome cough, in what part of the body he feels soreness ; and he will frequently reply, "in the breast ;" while, if desired

to place his hand on the spot, he points out the stomach. The irritation which is the cause of the cough, may have the same variety in its locality.

Cough may arise in any of the parts, upon which it is intended by nature that the diaphragm should exert its action : this is frequently, and especially, the case with respect to the contents of the abdominal cavity. See Dr. Bree on asthma, and professor Broussais on inflammation. The latter especially, has given a perspicuous delineation of symptomatic cough, arising from acute and chronic gastro enteritis. We therefore discover the absolute necessity of a well regulated examination, in these cases in order to detect the seat of inflammation or irritation, and form a correct diagnosis. After a general examination of the external appearance of the thorax, the remaining modes of inquiry may be divided, into the inspection of the sputa, percussion, auscultation, mensuration, and the Hippocratic succussion. These are all necessary to a complete system of investigation. The matter expectorated in pulmonary diseases, should be the first thing examined—at least generally. If these are viscid and transparent, they indicate acute catarrh or bronchitis. If subsequently they become whitish, yellow, greenish, or opaque, this indicates the decline of acute disease, or the presence of the chronic. If the sputa is so tough as to adhere to the side of the vessel when inverted, and particularly, if streaked with blood, they indicate pneumonitis. If whitish, opaque masses float in a frothy fluid ; or if a puriform fluid is discharged, con-

taining small white masses, indissoluble in water, and coagulable in muriate of ammonia, they are most likely the product of tubercular ulceration. If the quantity discharged from a tubercular cavity, be very large, and of a thin purulent form, the supposition is in favor of a fluid contained within the sac of the pleura, suddenly forcing its way through an excavation, and being discharged by the bronchiæ. See M. Laennec on *pthisis pulmonalis*. The hawking or coughing up of false membrane, indicates the existence of membranous croup. An offensive smell, arising from a dark green, or black discharge, indicates the existence of gangrene of the lungs. We distinguish blood discharged from the lungs from that discharged from the stomach, by the following marks. Blood discharged from the lungs is of a bright red and frothy appearance, and generally mixed; it is discharged by coughing, and not by vomiting. When copious, it constitutes the disease called *haemoptysis*. The next thing that presents itself, as the most in order in our examination, is percussion, or sound produced by striking the chest. The chest of a person in health yields, when struck lightly by the ends of the fingers, a hollow and somewhat drum-like sound. The resonance thus produced, arises from the air contained within the spongy tissue of the lungs, which receives the impulse through the thoracic parieties. In the natural and healthy state, as the clearness and fulness of the pectoral resonance, or percussion, depends on the air-filled structure of the lungs, and the tenacity and tension

of the containing parieties ; it is evident that those parts of the thorax will sound best, that most completely presents these conditions. For a more specific detail of the natural sound of each part of the chest, we refer to the table of the regions into which Laennec has divided the chest. The practice of percussion requires some manual dexterity. The posture of the patient should be one that is least painful to himself, and most convenient to the physician. In practising percussion, Dr. Williams, in his work on diseases of the lungs, recommends the part to be covered with a linen or cotton garment, to render the stroke of percussion more equable, and prevent it from producing pain ; and for this purpose, a shirt, or bed gown ; answers very well. Dr. Forbes however, the translator of Laennec, thinks this precaution unnecessary ; while P. A. Piorry proposes a plan, which, in our estimation is more important, and more highly spoken of (especially by the celebrated Arnold) than any other mentioned. He proposes that, in place of the direct percussion of an organ or cavity, to apply a thin plate of some firm and sonorous substance, over the part to be examined ; and he recommends a circular ivory plate or pleximeter. See *North American Med. and Surgical Journal*, No. 16, page 320. It is also necessary in using percussion, to familiarize the ear with the natural sounds of the various parts of the chest ; for example, the exact locality, and extent, of the liver and heart, should be studied on a healthy individual. In making examination of the sick, occasion should be

taken to compare the opposite sides of the thorax, at corresponding points. Percussion is generally performed with the three first fingers of the right hand, held in such a manner together that, with their last joints at right angles with the surface to be struck, their tops shall fall simultaneously on it. The stroke must be made lightly, and with a jerk. by drawing the hand back the instant it has fallen. The phalanx of the fingers should fall on the chest, more or less in the transverse direction of the ribs ; and the examination of circumscribed spots can be best effected, by percussion with a single finger, as on the clavicle, a rib, &c. The indications derived from percussion are very simple ; they consist merely in a greater or less degree of density of the parts struck upon. The one is produced by the solidification of the lungs in pneumonitis, large masses of tubercular matter, tumours of any foreign character, aneurisms, large collections of liquids (as in the pleura,) and finally, enlargements of the heart, and liver. The sound on percussion being louder and clearer, or more hollow, than is natural, arises from the presence of an unusual amount of gaseous matter ; as in emphysema of the lungs, and pneumothorax ; and the augmented density may be situated in any part of the lungs. The indication thus obtained, although only relating to the density of the parts, is of great value, and alone may sometimes detect diseases, when all other signs leave them in obscurity. But their importance and value is vastly increased, by the addition of the signs of auscultation,

The signs of auscultation are, those sounds produced in the chest which may be heard by the direct, or mediate application of the ear to its parietes or walls.—The sounds heard by auscultation are generally produced, by the natural movements of the organs contained within the chest. These movements are those contained within the chest, of respiration, the voice, and those of the heart. By the ingress and egress of air, a sound of a peculiar nature is produced. A difference in the sound arises from a diversity in the size of the tube, through which the air passes. The differences of sound are distinguished by Laennec, and Andral, according to the tubes and vesicles, through which they pass; and have received the epithets of tracheal, bronchial, and vesicular. We will refer, for the situation of the different kinds of respiratory sound, to Williams on the lungs. For the illustration of tracheal respiration we refer to the anterior and lateral parts of the neck, the superior sternal region, the sternal portion of the subclavian region, and sternal portion of the acromian region. Of bronchial respiration, to the middle portion of the sternum, and the adjacent mammary regions. And of vesicular respiration to the remaining parts of the chest. The sounds of respiration are different, according to the age.—From birth until the period of puberty, the sound of respiration is much louder, and more shrill, than in after life. Laennec terms this sound, or species of respiration, *puerile*. About the age of puberty, the sound of respiration assumes the character of adult

respiration. The sound of vesicular respiration, is produced by the penetration of the air into the lungs ; and its equal presence is regarded as an index of healthy performance of the function. The total absence of respiratory sound in a part, indicates that the air no longer penetrates there ; either owing to an effusion into the pleura, or because something excludes its entry into the pulmonary tissue. If the sound on percussion is natural, there is probably an obstruction of some of the bronchial branches leading to the part. If it is dull, there is solid or liquid effusion, either in the vesicular structure of the lung, or in the intervening pleural space. But if it be clearer than usual, there is either emphysema of the lung, or an aeriform effusion into the pleura.

There is a remarkable class of sounds, produced by partial obstruction to the passage of the air through the bronchial ramifications. These sounds are called *rhoncus* by the Latins, *rale* by the French, and *rattle* by the English. These are divided, according to eminent writers, into the dry, and humid. The dry rhonci are those sounds produced by the passage of air through bronchiæ, which have some part of their calibre contracted, by a substance more or less solid. Some of the rattles are loud, and of a singular and striking character. The crepitating rattle resembles the sound produced by decrepitating salt in a hot dish. This indicates a physical state of things, only found in the first stage of pneumonitis, or inflammation of the lungs. In oedema of these organs, and sometimes in

haemoptysis, the dry, sonorous rattle or snoring, and the dry, sibilant rattle, or whistling noise, are heard in the cavity of the thorax, by means of the stethoscope. In the commencing stage of catarrh or bronchitis.—The dry sibilant rattle frequently resembles a long whistle, of various notes and loudness ; at others, it is like the chirping of a bird, the click of a small valve, or the short sharp sound produced by suddenly separating two smooth surfaces of marble, placed in contact with each other, and thickly coated with oil.—The dry mucous rattle is the same sound which is heard by the naked ear, in the trachea of the dying.—This is indicative either of declining, or chronic catarrh or bronchitis ; or of the presence of a large amount of thick liquid in the bronchiæ, from any other cause,—as from the evacuation of a tubercle, the discharge of a large amount of blood, or finally the passage of air in and out of a tubercular cavity half filled with liquid. The investigation of sound within the thorax, is best ascertained, by the use of instruments, or mediate auscultation. The instrument, which is in general practice, and which we would consider preferable to all others, is simply a cylinder of wood, perforated in its centre longitudinally by a bore three lines in diameter, and formed so as to come apart in the middle, for the benefit of being more easily carried. One extremity is hollowed out, in the form of a funnel, to the depth of one inch and a half ; which cavity can be obliterated at pleasure, by a piece of wood so constructed as to fit it exactly ; with the exception of

the central bore, which is continued through it, so as to render the instrument, in all cases, a pervious tube. The complete instrument, (that is, with the funnel shaped plug infixed,) is used in exploring the signs, obtained through the medium of the voice, and the action of the heart. The other modification, or with the stopper removed, is for examining the sounds communicated by respiration. This instrument is designated a cylinder, or stethoscope. The investigation of the voice is a sign, by which we discover pectoriloquy or ægophony. For the purpose of examining the voice, the plug of the instrument must be replaced, and the whole thus converted into a simple wooden tube.—When thus prepared, and placed immediately over a tubercular cavity, filled with air, and communicating with the bronchiæ, if the patient speak, or cough, the sound appears to come to the listener through the tube of the instrument, directly from the cavity within the chest. This constitutes the famous pectoriloquy, a most singular and striking phenomenon; and is the distinctive sign of the last stage of consumption.—Ægophony is the peculiar modification of pectoriloquy, which owes its existence to the pressure of effused fluid on the lungs; enabling us to hear the natural resonance of the voice, in the larger branches of the bronchiæ. Its peculiar tone resembles the cry of a goat, and is indicative of pleurisy, of moderate liquid effusion, and of moderate hydrothorax. The phenomena of metallic tinkling, resembling the sound produced by dropping grains of sand into a metallic or glass

vessel, is peculiar to the pneumo hydrothorax, with a fistulous opening into the bronchia. It is heard when the patient coughs, or speaks; and sometimes in simple respiration. The practice of succussion is still used by some practitioners, and especially by Laennec:—it is desirable, to establish the presence or absence of pneumo hydrothorax; and is performed by agitating the thorax. The result is, that a fluctuation will be heard, as in a cask or vessel partially filled.

On the auscultation of the heart we will say little, in a general point of view; and when we come to the history of diseases of the chest, we will dwell more particularly on this mode of examination. The sound produced by muscular contraction of this organ, was first noticed by Dr. Wollaster; it constitutes the sound of pulsation, which is heard in the prœcordiæal region. This sound is double, and consists in a dull slow noise, immediately followed by a short quick one, to which succeeds a short interval of silence. The first sound is produced by the contraction of the ventricles, and is synchronous with the pulse. The second is caused by the contraction of the auricles, and, in the succeeding interval, both are at rest. The sound of pulsation is naturally loudest in the prœcordial region; that is, the space between the cartilages of the fourth and seventh ribs of the left side; and on the lower part of the sternum. The former part corresponding with the left, and the latter with the right side of the heart. Besides the sound, there is an impulse or shock

communicated by the stethoscope to the ear, during the contraction of the ventricles. This impulse is found only in the precordium ; and, if the sternum be short, sometimes in the epigastrium. Such are the common phenomena, discoverable in the healthy and moderate action of the heart.

The following are the most remarkable effects produced by disease : Simple dilatation increases the loudness and extent of the pulsation, but diminishes the impulse that accompanies them. Simple hypertrophy increases the impulse, and diminishes the sound of the pulsation. Hypertrophy and dilatation equally conjoined, or active dilatation, increases both the impulse and the sound, in degree and extent. The ventricles are the most usual seat of disease ; but the auricles not unfrequently suffer also ; and the signs of derangement are more perceptible in the upper part of the præcordial region, besides the sound produced in the contractions of the auricles and ventricles, there sometimes recurs concomitant sounds, of a peculiar nature, apparently produced by some derangement in the heart, or large vessels. Such are the murmur *Fol-lis*, murmur *Limæ*, purring, *Tremitus*, &c.

In descending, in some measure, to the diagnostic symptoms of particular diseases of the chest, we will find, that when the expectoration from the lungs assumes the character of the second stage, if we have recourse to the stethoscope, we shall discover incipient pectoriloquism ; and this will daily become more evident, and sometimes at the end of a few hours become

complete. Laennec states, that "in upwards of two hundred instances of consumptive patients, whose bodies I have examined, after having ascertained during life the condition of the lungs, as indicated by the cylinder, I have not met with a single instance, in which ulcerous excavation did not exist, in those points of the lung, in which the phenomenon of pectoriloquism had shown itself distinctly ; and, as in the most of these cases, I had ascertained the existence of this in several points at once. I have, in fact, several hundred of positive observations on this point, and not a single negative." And he concludes unequivocally, that pectoriloquism is a true pathognomic sign of phthisis, or chronic pneumonitis, and that it is the only sign that can be regarded as certain, in the last stage of this disease.

The auscultation of the respiration also affords some useful indications in these cases. The sound of respiration is very audible, and resembles the sound of wind, as of a pair of bellows ; or, like that observed on applying the cylinder to the trachea, but more distinct. Percussion often elicits a dull sound, as one species of that variety of respiration, denominated the rattle, affords almost as characteristic signs of the disease as pectoriloquism itself. This species is called the mucous, or gurgling rattle. In exploring the phenomena of pectoriloquism, if the patient is in bed, we ought to make him lie on his back, and at both sides of the bed successively, while we examine the anterior parts of the chest. In examining the lateral

parts of the chest and the axilla, we must make the patient lean from us ; and, while examining the upper part of the shoulder, he must lean toward us. In examining his back, we seat him in his bed, with his back toward us, his body a little bent forward, and his arms crossed.

In pneumonitis or peripneumony, we arise to the greatest certainty in exploring the lungs, by the stethoscope. In the first degree of this affection, the respiratory murmur is still heard, in the part affected, whether percussion affords any alteration of the sound or not ; and it is further accompanied with the crepitous rattle, which resembles the crepitation of solid salts in a heated vessel. The only other diseases, in which this species of rattle is found, are œdema of the lungs, and hæmoptysis. The second and third varieties of peripneumonia are distinguished by the total absence of the respiratory murmur. Although auscultation, in those cases, affords more convincing indications than percussion, still the latter is a useful auxiliary. In this case, the method of auscultation requires two precautions : namely, to cause the patient to breathe a little more frequently, and to keep the cylinder exactly applied to the chest. In hæmoptysis, the stethoscope affords two indicative signs of this affection, viz : 1st. The absence of respiration in a portion of the lung, of small extent, and 3d. A mucous rattle. In pulmonary catarrh or bronchitis, there are four principal kinds of phenomena : 1st. The humid or crepitous. 2d. The mucous or gurgling. 3d.

the dry sonorous ; 4th. The dry sibilous, or hissing rattle.

The pathognomonic sign of emphysema is furnished by a comparison of the indications, derived from percussion or auscultation ; the respiratory murmur is inaudible, over the greater part of the chest ; at the same time a very distinct sound is produced by percussion. In pleurisy, as soon as effusion takes place, the resonance of the chest fails, over the whole of its site. The signs however, produced by the use of the stethoscope, are more certain than any other mode of examination. These are, first, the total absence, or great diminution, of the respiratory murmur ; and secondly, the appearance, disappearance, and return of the sound called Hægophonism.

In peripneumony or pneumonitis, the disappearance of respiration is gradual and unequal, and preceded by a crepitous rattle. In pleurisy, on the contrary, the loss of the respiratory murmur is sudden, equable, and uniform. In hydrothorax, percussion elicits the dull sound ; and the stethoscope detects the absence of respiration, over the whole chest, except at the root of the lungs. In hæmothorax, the cylinder and percussion afford the same indications, as in the effusion of pleurisy. In pneumothorax, the certain physical signs are afforded, by the comparison of the results of percussion and moderate auscultation. Whenever we find one side of the chest sounding more distinctly than the other, and, at the same time, perceive the respiration very well in the least sonorous side, and

not at all in the other, we may be assured there exists pneumothorax on the latter. We must now close this part of the subject, by stating that when we come to diseases of the heart, some of the particulars of the diagnosis will be related.

We have now come to the description of the diseases of the chest; and the affections of the pulmonary organs shall be first considered. Of pulmonary inflammation in general :

In those organs, inflammation is always an irritation seated in a larger or smaller fasciculus of capillary vessels, which have invited the fluids to them; and thus tend to change their chemical composition. But the result of this local effort differs, according to the predisposition or temperament; and according to the nature of the capillaries, in which the inflammatory action first arose. This difference we will assume, as the foundation of the distinctions we will endeavor to establish; and we shall admit as many species of pulmonary inflammation, as there are capillary fasciculi in the lungs, in which the inflammation pursues a different march. We shall distinguish in our division of diseases of the pulmonary organs, three species of inflammation :

1st. Inflammation of the mucous membrane.

2d. Inflammation of the serous membrane.

3d. Inflammation of the parenchyma.

The first we will designate by the title of bronchitis ;

The second pleuritis ;

And the third pneumonitis.

The species of diseased lungs called phthisis, we would denominate chronic pneumonitis.

These affections present themselves in a variety of forms ; both of the acute and chronic ; and when they terminate fatally, morbid changes are discoverable in the fasciculi of the sanguine cappillaries. We shall therefore designate these three phlegmasiæ, by the general title of *sanguine inflammations* ; and shall endeavor to follow them through their different varieties and terminations, so as to comprehend the most important facts connected with the etiology and issue of these diseases.

In reviewing the pathological character of acute bronchitis, we would consider it so closely allied to common catarrh, that it would be a waste of time, and not at all calculated to subserve any important end to draw a line of distinction. The plan, at all events, that has been adopted in our division and nomenclature, of diseases of the pulmonary apparatus, is, according to our opinion, accurate and interesting ; as it reduces the fundamental points or heads of these diseases into a state of plainness and simplicity, and at the same time leaves room for the comprehension of every thing necessary on this subject. Inflammation of the mucous membrane of the bronchiæ may differ in the degree of its violence, and put on different appearances and symptoms ; still it is one and the same disease. Acute bronchitis (or inflammation of the air tubes) generally commences with a sense of lassitude, chilliness, slight cough, and constriction or oppression

about the præcordia ; in many instances, however, there is little or no pain in the breast ; a sense of weight and uneasiness in the thorax, being the only unpleasant symptoms that present. In those cases, the febrile symptoms are moderate, and the disease is attended with no danger. If the disease, however, should continue, the constriction and oppression increases, the countenance is indicative of anxiety, respiration becomes more difficult, and laborious, and is sometimes attended with a rattling sound, and a considerable degree of hoarseness. As the disease advances the symptoms become aggravated ; respiration is more difficult, especially in the recumbent posture. At first the cough is dry ; but a copious secretion of viscid transparent mucus, resembling the white of an egg, soon occurs, and although it may be accompanied with a temporary mitigation of symptoms, you may rest assured, that as long as the sputa presents this appearance, the disease is not checked in its violence. And whenever the expectorated matter becomes thick, and loses its transparency, you may regard it as a favorable sign ; but as the disease increases in violence, the secretion of mucus into the bronchiæ becomes very copious ; and, along with obstructed respiration, considerable drowsiness and pain in the head occurs, tongue white, and little or none furred, skin dry and temperature not much above the natural standard. If along with these symptoms, the pulse rises, the heat augments, and the circulation becomes more rapid ; while, at the same time, the tightness and oppression

in the præcordia are distressing, and the breathing very laborious, we may be assured that the irritation is no longer confined to the mucous membrane and glands, but that the cappillaries of the tissue, which unites the air cells to the vessels, is affected ;—and this constitutes a consecutive pneumonitis. This does not obtain the same violence, as if it were primitive ; the inflammatory irritation being apt to remain in the cappillary system in which it commenced ; and when this system is so constituted as not to experience this phenomenon in a high degree, the inflammation rarely becomes as violent, as when it originates in the more sanguine capillaries. For instance, certain very robust and plethoric individuals are exposed to affections of the bronchial tubes ; and the moment the disease has commenced, it seldom attains the intensity of a pneumonitis. Under other circumstances, the same individual may be attacked by a violent pneumonitis, the course of which will have no resemblance to their habitual bronchial diseases.

Certain modifications of the atmosphere specially affect the muco glandular system ; in such cases, bronchitis may become pneumonitis : others develop a pneumonic form, which can never be mistaken for bronchitis. It may be remarked that acute laryngeal and tracheal anginosa, may occasion death, without affecting the parenchyma ; but this is by a total obstruction of air. When they become chronic, the inflammation is always propagated to the parenchyma, if the patient is not cut off by some other phlegmasia.

If bronchitis, in disorganizing the mucous membrane, does not communicate an irritation to the capillaries of the parenchyma, the lungs will not become indurated.

Bronchitis may terminate in a chronic form ; it may terminate in cynanche trachealis,* and prove fatal in children. This I have observed in more than one case. It may be complicated, or terminate in hepatic or liver affection, and be attended with tenderness and pain in the right hypochondria, oppression in the præcordia, nausea, vertigo, head-ache, dark coloured and very foetid discharges, &c. See treatise on the inflammation of the mucous membrane of the lungs by C. Hastings. For diagnosis—see description of physical examination. We would also mention the most important characteristic symptoms ; Great oppression and tightness in the præcordia, with little or no pain ; pain in the head, aggravated by coughing ; rattling respiration ; uneasiness in the recumbent posture ; pallid countenance ; copious secretion of viscid, frothy, and transparent mucus in the bronchiæ ; and generally moderate pyrexia. Post mortem appearances,† the mucous membrane generally injected ; the smaller bronchial branches usually filled with a tenacious mucus. In many instances the substance of the lungs exhibits a reddened, hepatized, suppurated, or tuberculated, structure. Prognosis, generally attended with much uncertainty ; as in some cases, which appear to

*Croup. †Appearance after death.

be going on without any particular danger, a sudden exacerbation will sometimes occur, and speedily terminate the patients life.

We next come to chronic bronchitis.* It is a disease of frequent occurrence, especially in variable climates. In its mildest form, it constitutes those lingering catarrhal affections, which are so common and lingering, during the autumnal and winter seasons, in old people; and the irritable pneumonic habits. These cases frequently begin with the cold weather, and continue to the end of winter. They are known by a troublesome cough; copious expectoration of a viscid muco-purulent, or whitish frothy matter; difficult respiration; heaviness, and oppression in the epigastrium;† anorexia; slightly furred tongue; irritated, quick, and frequent pulse; high coloured and scanty urine; cough occurring in fits, and more severe in the morning, and always increased by sudden vicissitudes of atmosphere, and usually by the inhalation of noxious vapours, fine dust, smoke, &c.—Pains, slight and transient, are sometimes felt, but especially after coughing. There is a variety of chronic bronchitis, which bears a strong resemblance to phthisis, or a chronic pneumonitis, and is sometimes taken for it. This variety, as well as the former, is the general consequence of neglected acute bronchitis; and the symptoms, in the incipient stage, are the same; but in the advanced stage of the disease, the

*Chronic inflammation of the air tubes.

sputa, or matter expectorated, becomes more like genuine pus, and often streaked with blood; and frequently, at last, the sputa acquires a whitish opaque colour, which readily sinks in water. Pulse is accelerated and tense toward evening, and the febrile symptoms change in the course of the day; partial sweats, about the head and breast, during the night; thirst; increased urine, high coloured. In the majority of instances, a sense of soreness in the chest, with an occasional pain in the thorax; cough, generally violent, particularly in the morning; respiration more or less oppressive, and attended with a wheeziness, and tightness in the breast. If the disease continues unaltered in its career, a copious purulent expectoration ensues; emaciation becomes general and rapid; the feelings of tightness and heaviness across the breast, become more distressing. In the forenoon the face is pale; and in the evening, one or both cheeks are usually flushed; tongue clean, and assumes a red and shining appearance. In a word, hectic symptoms are completely established.

This disease is sometimes complicated with hepatic disease, and forms what is called *dyspeptic consumption*. In this variety of the disease, we have, in addition to the ordinary phenomenon of chronic bronchial inflammation, various symptoms indicative of hepatic derangement. This form of disease, I have no doubt, many of you are familiar with. Cases might be cited, confirming this statement; but our limits here will not permit.

Chronic bronchitis is the sequelæ of the acute, of measles, of hepatic disorder, of primary located derangement of the digestive organs ; and it may directly proceed from atmospherical vicissitudes, from the inhalations of irritating vapours, or particles of matter floating in the atmosphere, from whooping-cough ; it may follow an intermitting fever, or of a remittent and continued form. It may be complicated with pleuritis, chronic arachnoiditis, and peritonitis, following a continued fever ; it may supervene on an adynamic fever ; it may be changed into or complicated with chronic pneumonitis, with a scirrhus state of the bronchial glands ; it may be terminated by an adynamic fever, and acute dysentery.

We shall now endeavour to verify those different changes and terminations of chronic bronchitis, by the citation of cases from our own practice, as well as from the authority of highly distinguished writers ; and as we consider this affection to be one of the most important, and one that is frequently overlooked, we feel it interesting, and necessary to be particular in its examination.

Broussais, states that in the fatal cases of chronic bronchitis, among the soldiers of the French army, induration of the substance of the lungs was almost a universal pathological phenomenon. He states, that while the grand army traversed Germany, in the glorious campaign of Austerlitz, some soldiers, too feeble to withstand so rapid a march, were affected by the cold, and contracted such an inflammation of the chest, as

obliged them to seek for assistance in the hospital.—After having administered the ordinary remedies, he states that he was surprised to find that no cures ensued ; some languished gradually ; while others having partially recovered, and given a hope of speedy restoration to health, suddenly relapsed and perished in two or three days. And, on a post mortem examination, a chronic induration of the lung was discovered.

We shall now relate some cases which will go to demonstrate our statements :—Case 1st. (See Broussais on inflammation.) “Guinet, twenty-five years old, tall, large chest, regular and fully developed skeleton, moderately muscular, and presenting the character of the bilioso-melancholic temperament, was affected with symptoms of chronic bronchitis, in the hospital of Brack, in Styria ; for more than fifteen days he had a high fever, much cough, dyspnœa, &c. He was treated by bleeding demulcents, stimulating expectorants, and blisters ; and in about twenty days left the hospital, in an apparent state of perfect recovery. But, in consequence of his march, carrying his knapsack, and the unavoidable exposure to the weather, (being very variable and tempestuous,) the disease returned, and he was obliged to return to the hospital. On his arrival at Layback, he was again put under treatment ; but the symptoms became aggravated, and were accompanied with a muco-purulent expectoration, rapid emaciation occurred, and he died, after five days of extreme suffering. On post mortem ex-

amination, there were three-fourths of the posterior parts of both lobes of the lungs indurated, and of the colour and consistence of liver ; no abscess, or tubercle.

We here recognize a chronic inflammatory state of the muco-bronchial vessels, degenerating into a pneumonitis, and terminating in induration.

I will now relate a case from my own practice :—I was called, in the summer of 1826, to see a man of the name of W., tawny complexion, tolerably muscular, and of a completely pulmonary make, laboring under symptoms of chronic bronchitis. He had been affected for several months, but was still able moderately to attend to business ; which proved that he had never experienced violent pneumonic symptoms ; and his colour demonstrated, that he was not suffering under the usual symptoms of hectic. I found him affected with dyspnœa, painful and spasmodic, especially in the evening ; cough, with a mucous expectoration ; a frequent, soft, and feeble pulse ; moderate temperature of skin : expressions of fatigue and depression. Nothing benefitted him : his general flaccidity prevented me from drawing blood ; blisters did not alleviate him for a moment ; and he expired in a long, and painful agony, four or five days after my first visit. We have reason to decidedly conclude, that this was a similar case to the preceding, and that a similar alteration of the structure of the lungs occurred.

Case 3d. Chronic bronchitis, with scirrhus state of the bronchial glands. Fa, aged thirty-six, entered

hospital No. 3 at Bruges, laboring under a cold ; he could scarcely speak ; articulated a few words in a hoarse voice ; eyes dim and languid ; face pale and meagre ; no appetite ; difficult dilatation of thorax ; cough, with little expectoration ; pulse slow, small, and compressible ; skin cold and pale. Debility increasing, he at length expired after a long struggle.— On post mortem examination, no tubercles or abscess, but bronchial glands thickened, scirrhus, and disorganized. This bronchial inflammation was propagated to the parenchyma ; finally pervaded all the membrane, and capillaries of the pulmonary vessels.

Case 4th. P. ———, a young man aged about 30, of rather a dark complexion, and a delicate make, came to my shop, in the winter of 1831, laboring under dyspnœa, cough, and some febrile symptoms ; he had been frequently relieved, but in a short time his symptoms would return. In two or three days after he left me, the symptomatic fever disappeared, and the disease assumed a chronic state ; the difficulty of breathing and cough rather increased, a clear mucous expectoration occurred, his nights became more restless, his pulse hard and unfrequent ; during the exacerbation of cough, his face became tumid, his legs swelled slightly in the evening, accompanied with a serous effusion throughout the subcutaneous tissue. Such was his situation. I endeavored to relieve him by mucilaginous and expectorant mixtures ; by anodyne diaphoretics, &c. ; which in a great degree, alleviated his symptoms. But unfortunately, in about

forty-eight hours after this, he was seized with a chill, which lasted several hours ; the heat of skin increased, mouth became foul, stupor occurred, and strength became prostrated. He calmly expired on the fifth day, sunk into a state of complete marasmus, without a struggle.

Dr. Broussais mentions in one of his cases, a chronic bronchitis terminated by a fever ; which displays very satisfactorily a striking example of the difference, existing between a constitutional disposition to bronchitis, and an innate tendency to chronic pneumonitis.

We have frequently met with a complication of fevers with bronchitis ; sometimes occurring at the same time, or immediately preceding, or following each other. Several cases might be cited to prove this, but our bounds will not permit. We shall however mention, that physicians, who have practised medicine in a country subject to intermittent fevers, must have discovered ataxic intermittents. They have seen intermittents offer a change alternately from the circumference to the centre, and vice versa ; and universally menace the organization with approaching danger. This change of action sometimes levels itself on the muco bronchial glands, and even will sometimes evidence a complicated affection of consecutive pneumonitis, and intermittent fever.

We shall mention some cases in the treatment that terminated favorably.

We now come to pleuritis, it being the most regular in order with the preceding. This is an inflammation

of the pleura, consisting of the pleura pulmonalis, and pleura costalis. For further light on the nature and extension of this membrane, see Horner's Practical Anatomy.

The general characteristic symptoms of acute inflammation of the pleura are, cough difficult and painful, respiration, fixed pain in the thorax, and fever.

In the examination of this affection, we will consider it as complicated and extensive in its character. Cullen was of the opinion, that the pleura can never be inflamed, without an extension of the inflammation to the pulmonary structure, and consequently accompanied with more or less pneumonitis. However, we believe that, from the observation of later pathologists, the pleura is often exclusively inflamed, and that the diagnostic symptoms are sufficiently characteristic, to enable us to distinguish between inflammation of the serous membrane and the parenchyma.* Without doubt, however, there is a very frequent complication, of the disease with inflammation of the subjacent tissues.

Progress and termination. When acute pleuritis suddenly arises in a robust constitution, by a vigorous cause, as a violent contusion of the thorax, a sudden diminution of temperature, &c. it generally begins with a chill, followed by a fixed and poignant pain in one or both sides of the chest; high fever; cough, which is short, frequent, suppressed, and for the most

*The spongy cellular membrane that connects the lungs.

part dry ; interrupted and laborious respiration. The dyspnœa may not be particularly observed, when the patient remains quietly in bed ; but it is well marked, when he engages in conversation ; in short, all the inflammatory symptoms, so well described by authors, are developed.

Although produced by the same causes, pleuritis has not always the same physiognomy. If from the beginning, phlogosis occupies the whole membrane, the pain is seldom fixed or limited ; the whole chest is painful, shooting from side to side, lancinating, dull, and, at other times, burning. The thoracic parietes are immoveable. The patient remains in a sitting posture, leaning forward ; his features altered, cheeks very much suffused ; he is afraid to cough, anxiety considerable, and febrile action intervene. The expecta is glairy and nearly colourless ; but when it extends to the lungs, the expectoration is mixed with blood, face suffused with a red flush, pulse hard, full and tense ; tongue furred, urine high colored, &c. In some instances, however, acute pleuritis is attended with scarcely any pain, or cough. Broussais mentions a case of that kind. Baglivi mentions similar examples. M. Tachera gives an account of a fatal case, in which there was but little pain. And Arnold asserts that the pleuritis stitch has not been mentioned in some instances, when, after death, the existence of the disease has been rendered unequivocal. Bichat also refers to this circumstance of absent pain. The serous membrane of the heart sometimes participates in the irrita-

tion—pain and anxiety, in the præcordial region; sleepiness, and absence of fever, &c. When the inflammation extends to the substance of the lungs, the patient may sink. Acute pleurisy is not in general a dangerous affection, and there is no inflammatory affection; that is more under the control of an active antiphlogistic treatment, at an early period. The following circumstances may be regarded as indicative of eminent danger :—a frequent effort to sit up, especially when there is a wheezing sound in the trachea; bloody expectoration, and an obstructed pulse. The supervention of diarrhœa is a most unfavorable sign: violent dyspnœa, convulsions and coma, are no less ominous of a fatal tendency. Schmidtman asserts, that he has never known an instance of recovery from this disease, after convulsions and coma had supervened.

Post mortem appearances :—the pleura is uniformly found red, or punctuated with small red specks irregularly shaped; and extravasation on the inner surface of this membrane, is a never failing occurrence, in fatal cases of this disease. Laennec thinks, that this extravasation commences with the inflammation. The matter thrown out, consists of a semi-concrete or pseudo membranous substance or of coagulable lymph; adhesions, through the intervention of false membranous substances, is nearly universal. Among the predisposing causes are, a sanguine temperament, a plethoric state, excessive irritability, narrowness and malformation of the chest: efficient causes are, blows and

contusions, violent exertions, febrile chills, cold, horror, terror, surprise.

Chronic pleuritis, or chronic pleurisy. Acute, frequently occasions chronic pleuritis, when the former has been neglected, either from the too impetuous afflux of fluids preventing adhesion, or from the quality of these fluids rendering them unfitted for a medium of union—or finally, from the phlogosis having disorganized the tissue, or depraved its action in an irreparable manner. But acute pleuritis produces the chronic form, even when it has been treated with apparent success; it is found to degenerate into the chronic state, although the pain had been frequently removed by a blister. The acute being improperly treated, is very liable to bring on the chronic form.

When chronic pleuritis is the result of a contusion of the thorax, it is preceded by more or less prolonged fixed pain. The irregular pains in the side and chest, when the patient has been exposed to cold or damp situations; or those which are the result of frequent coughing, should inspire some distrust, and especially when felt on a deep inspiration. But when an acute pleuritis, which has been well marked, leaves after it a permanent pain in the previously affected side, or when the acute and circumscribed pain is succeeded by another which is obtuse and extended, chronic pleuritis is very probable. If it be afterwards observed, that the affected side ceases to be sonorous on percussion; if the latter, as well as cough, sneezing, and all shocks communicated to the body, be painful; if the

patient, after having for a long time avoided reposing on the affected side, does not find relief except in resting on it ; we may be decided, that the inflammation has terminated in effusion, and that the lobe is for the most part in a state of atrophy, and become unfit for respiration. If, whilst these disorders are taking place in the thoracic viscera, the patient complains of a dry cough, increased by exertion ; and, during the night, if the pulse has been frequent without hardness, the heat seldom febrile, complexion of a pale yellow, and the *embonpoint* little diminished ; it is to be concluded, that the pleuritis is simple. This species often lasts for more than a year. The patient may perish in a dropsy, or at least œdema. They are also found to die in a state of complete marasmus. If, on the contrary the patient has frequent returns of dyspnœa, suffocation, and fever ; if the cough becomes attended with expectoration ; if the disease is constant, the emaciation rapid ; it may be taken for granted, that the phlogosis has been propagated to the parenchyma ; and induration, and tubercles are to be feared. If the subject be predisposed to affections of the heart, the palpitations, and other symptoms of aneurism, may become so intent, that the Physician may mistake the principal disease. If the chronic pleurisy be obviously developed, from one of the causes we have mentioned, the commemorative symptoms are not so clear, as in that which succeeds to acute pleurisy. Still it may be known in two modes : by the pain, and its effects ; and by the effusion and its consequences. We may con-

clude that effusion has taken place, by the sound being dull on percussion.

When there is dropsy, and the collection is considerable, the lung of the diseased side is compressed, and reduced to a small volume, no longer giving passage to blood ; there is a dull sound, and dyspnœa, but the patient retains his appetite, and there is little fever.— If, on the contrary, there is pneumonitis, besides the dull sound, there is fever, and redness of the cheek.— Sometimes the acute phlegmasia grafts itself on the chronic ; and then wo to the patient, if the dull sound existed before this accident. See Costers Physiological Practice.

When a patient is harrassed by a harsh cough, which continues for several months, without a continued febrile action being developed, or any symptom of sanguine phlogosis, and chronic induration ; the point of irritation is not seated in the bronchial mucous vessels : it is seated in the stomach, the larynx, the trachea, in the pectoral cavity, the mediastinum, the parietes of the heart and large vessels. But it should be stated, that these cases are very rare. Chronic pleuritis may be complicated, with pulmonary tubercles, and symptoms of hypertrophy, with sanguineous effusion, with intermittent fever, with gastritis. Its developement may be obscure and latent, with sanguine phlogosis, and tubercles of the lungs, with ulcers, and perforations of the parenchyma.

Chronic pleuritis may commence under the form of rheumatism, and terminate by perforation of the par-

enchyma of the lungs. There are other diseases of the chest, which are of more rare occurrence, and most generally the sequelæ of the last preceding affections, and which may be mentioned along with them.

Hydrothorax is sometimes idiopathic—it commonly exists only on one side. It consists in an accumulation of serum, or water in the cavity of the pleura—when the effusion is great, the affected side is evidently larger than the other. Its chief and almost only symptom, is the impeded respiration—its progress, and the state of the general symptoms, can alone distinguish it from chronic pleurisy. Symptomatic hydrothorax is very frequent—it may accompany almost every disease, acute or chronic, general or local.—Its presence almost always announces their approaching and fatal termination, and often precedes this only a few moments. There is another variety of symptomatic hydrothorax, which arises from organic affections of the pleura. These disorganizations are cancerous tumours or tubercles—penetrating wounds, or a severe contusion of the chest, may produce an effusion of blood into the cavity of the pleura. This may take place in certain diseases, or may follow the rupture of an aortic aneurism—and, according to the authority of eminent surgeons, in some cases copious exhalation of blood may take place spontaneously. Tumours of different kinds are also found developed between the pleura of the ribs and thoracic parietes. Laennec has met with the medulary tumour, tubercles of small size, and cartilaginous incrustations. Haller found, in this

situation, an immense cyst, containing a serous fluid, and compressing the lungs into the size of a man's hand. M. Dupuytren found two enormous cysts of the same kind, in the body of a young man who died of suffocation. In cases of wounds, some parts of the abdominal viscera have passed into the thorax. It has occurred also, from rupture, from original malformation of the diaphragm—also a hernia has been formed by the lungs through the intercostal muscles. Grateloup has published a case of the kind—Boerhave records a similar instance, and Sabatier mentions another. Occasionally we find æriform fluids in the cavity of the pleura. These fluids are sometimes in such quantity, as very forcibly to compress the lungs, and distend the thoracic parietes in a very considerable degree. All that can be found respecting it, in practical writers is a few examples of the disease, very imperfectly described—it is named pneumathorax.—Williams and Laennec mention a contraction of the chest, consequent to certain pleurisies. Laennec states, that the subjects of those morbid changes are sufficiently distinguishable, even by their external shape, and by their gate.

They seem always to lean towards the affected side, and this is always manifestly narrower than the opposite side, there being frequently more than an inch of difference, when they are both measured by means of a cord. The length of the chest is equally diminished, the ribs are closer to one another, the shoulder is lower, and the muscles (especially the

pectoral) are only half the size of those on the opposite side. This morbid contraction arises from a somewhat irregular termination of pleuritis, or of the acute becoming chronic. In these cases, the sero-purulent effusion having continued for a long time, the false membranes, which invest the pleura and lungs, acquire a considerable hardness, and incipient disorganization, which render them incapable of being converted into cellular substance. When the effusion is observed, the lung long compressed by it, and further bound down by a strong false membrane completely investing it, cannot dilate itself sufficiently to keep pace with the progress of absorption—the ribs, consequently, contract and the cavity of the chest is thus diminished.—This contraction of the chest, consequent to pleurisy, being but little known, we shall refer, for an exemplification of it, to the four cases cited by Laennec, in his treatise on diseases of the lungs—and as our bounds are circumscribed, we would merely state, that the first and second afford examples of the disease, after it has passed through all its stages—the third exhibits its progress, and the last is a curious complication of old symptoms.

We are acquainted with a gentleman living in our neighborhood, that has evident signs of the contraction of the chest—he leans to one side, and his chest is narrower on that side than on the other. We will now mention some cases, connected with this subject, of some interest and importance.

Case 1st. See Broussais, on inflammation of the

pulmonary apparatus. Brouvard, aged twenty, dark complexion, narrow chest, entered the hospital of Udine on the 13th April 1806, for a chronic affection. He presented himself in the following condition:—Face lengthened, expression of pain, dyspnœa, bubbling respiration, with a convulsive grasp at each respiration; violent fits of coughing, during which he expectorated mucus mixed with blood; pain in the side, could not bear percussion, or the weight of the bed clothes; pulse frequent, active, and developed. These symptoms continued for some time, but at length gradually abated under the proper treatment; and, against the 1st of June, he was restored to perfect health, and discharged a few days after. This disease had been standing for eighteen months; which suddenly became complicated with inflammation of the parenchyma.

Case 2d. On the first week in October, 1831, Mr. ———, came to my shop, laboring under cough, dyspnœa, pain in the sides, fever, &c.—and he stated that he had been troubled with those symptoms for a considerable time. I gave him some anodyne expectorants, and diaphoretics, which afforded him partial relief. However, he did not pay that attention to himself necessary; consequently, he became worse, and when I was first called on to visit him, he was affected with pains in the side, occasionally shifting their situation—cough, accompanied with muco-purulent expectoration, dyspnœa, anxiety of expression, fever, &c.; pulse, frequent, hard and irregular. Ve nesec-

tion, anodyne demulcents, expectorants, inhalations, diaphoretics, &c. were used ; he recovered so much as to be able to resume his work ; at which he continued for the space of two weeks, and again suddenly relapsed. When I visited him again, he was laboring under a complete chronic phlogosis of the pleural membrane ; he coughed much, and expectorated but little ; the pain in his side was obscure, complexion a little livid, a difficult dilatation of chest, emaciation, and extreme debility. Stimulating diaphoretics, epispastics, anodyne, demulcents, expectorants, light and nourishing diet, &c., restored him to good health and spirits. These cases show, that however difficult chronic pleuritis is to manage, still it is not hopeless ; and that by correct information, and persevering treatment, we may overcome even apparently desperate cases. Several other cases might be cited, but this will suffice.

We now come to acute pneumonitis. This disease consists in an inflammation of the parenchyma of the lungs ; and, according to the changes produced in the tissue, we would divide it into three stages. The first is, that of simple inflammatory injection ; in which the size of the blood vessels are increased, and a serum, more or less abundant, is infused into the interstitial tissue. The lung is of a livid colour externally, is much firmer internally, and heavier than in its healthy state ; is still somewhat crepitent, and usually floats in water. [Arnold.] In the second variety, the lung presents that chain in the tissue called hepatization ; it

resembles liver, as its name imports. This change consists, in the effusion of a semi-solid albumen in the interstitial tissue; and which pressing on, and destroying the cavities of the air cells and smaller bronchiæ, destroys the spongy texture of the lung, and converts it into a more or less solid mass. A hepatized lung presents the following character after death:—externally it is of a deep red colour, which internally is mottled with a number of light yellowish granular spots, with patches of whiter colour—it sinks in water, and is no longer crepitant: this is called by Andral, *rumollissement rouge*. In the third stage, the diseased lung becomes infiltrated with a purulent matter, which is consistent at first, but soon acquires the liquidity of common pus. Post mortem examinations show the change of colour, from the red hepatization to the discoloured yellowish or brownish. This is called by Andral *rumollissement*; and is, properly speaking, suppuration of the substance of the lungs. Laennec says, that in several hundred cases of the acute pneumonitis or peripneumony, that he examined, he has met with only five or six collections of pus in the inflamed organ. We have met with one similar case, of a discharge of pus by the mouth from a large vomica in the lungs;—the patient recovered. Gangrene is a rare termination, These varieties are commonly conjoined in different ways; very commonly one lung is inflamed throughout in the third degree, while the other exhibits only some spots in the first or second degree; sometimes the three varieties all exist in the

same lung.—The characteristic symptoms of this affection are oppressed respiration, an obtuse pain in the chest, generally in the region of the sternum or breast, sometimes in the epigastrium, and occasionally in the side ; cough with copious viscid expectoration, mixed with blood ; fever, scanty and high coloured urine, pulse frequent, full, obstructed, laborious, and seldom hard ; but, in the advanced stages, becomes weak, soft, obstructed and irregular. If the disease threatens disorganization, the countenance becomes rather livid, veins of the neck turgid ; patient generally lies on the affected side ; the sputa is white, slightly yellowish or greenish ; the tenacity of the matter is so great, that we may often reverse the vessel which contains it, and retain it in this position for a time, without detaching it from its sides. This symptom is regarded by Laennec, as pathognomonic. The symptoms of this disease are sometimes so equivocal, that the true nature of the disease may be mistaken, and fatal disorganization ensue ; an instance of rapidly fatal pneumonitis is reported by Dr. Dumison, in which no pain whatever occurred, nor did epigastric pressure procure any uneasiness. Andral has related seventeen cases, in which one or more of the characteristic signs were absent.

There are other diseases, of which we will take notice under this head. Hæmoptysis,* or pulmonary apoplexy, may be mentioned here ; it consists, accor-

*Spitting of blood.

ding to the notion of modern writers, in the effusion of blood into the parenchyma, and vesiculæ of the lungs. Whether this effusion is always in consequence of rupture of vessels, or sometimes simply an hemorrhagic exudation, is a matter of dispute among distinguished writers. Ancient authority attributed hæmoptysis to a rupture of some of the pulmonary vessels ; and this is still the opinion of many practitioners of the present day. Modern anatomists, however, consider it as depending upon an exhalation of blood, from a functionally deranged part of the pulmonary organs. For our part, we would consider it, under certain circumstances, owing to both of those causes. The former would seem better to explain the suddenness and quantity of the hemorrhage ; as, for instance, the bursting of aneurism, or the rupture of blood vessels in a tuberculous cavity ; and the latter, the common form of the disease.

Whatever may be the severity of this affection, under its common occurrence, resolution takes place with considerable facility. The extent of the hæmoptic engorgement, rather than the quantity of blood brought up, indicates the degree of danger to be apprehended. Emphysema is another disease of some importance ; it consist in a general dilitation of the air vesicles, whereby the tissue is rendered coarser, and less dense. As long as the parts continue in this state, the disease consists merely in an excessive permanent, and unnatural distension of the air cells ; but when the distension becomes more considerable, the air

cells are ruptured in certain points, and the surrounding cellular substance of the lungs becomes distended by extravasated air. Emphysema may effect both lungs, one only, or a part of one. For further anatomical knowledge on this subject, see Baillies' *Morbid Anatomy*.

This disease is not attended with any immediate danger; but it produces an habitual dyspnœa, which incapacitates the body for exertion, and renders it obnoxious to serious, and even fatal effects, from contingent pulmonary irritation. Œdema of the lungs consists of a serous effusion in the interstitial tissue, between the air cells and the vascular rete; or an infiltration into the substance of the lungs, in such degree, as notably to diminish its permeability to the air in respiration. This disease is not much known; none of the authors, who have treated formerly of dropsy, have mentioned it. Among practical writers, Albertin and Bertin are the only ones, who have paid any attention to this disease. Œdema of the lungs is rarely idiopathic; it most frequently accompanies organic diseases of the heart of long duration, and other dropsical affections; it is sometimes the sequelæ of fever, exanthemata, pneumonitis, chronic bronchitis, scarlatina, and rubeola. Various species of cancer, of cysts, containing fluids, hydatids, cartilaginous, bony, or cretacious tumours, are occasionally developed in the lungs. The effect of these various productions, on the surrounding tissue of the lungs, is much less than might be expected. There is also a species

of cancer, which has been named by morbid anatomists, encaphaloid or brain like tumour ; and another species, called melanosis.

Having passed through the varieties of disease, comprehended under the preceding head, we next come to chronic pneumonitis,* or pthisis pulmonalis.—We have stated, that the irritation of the bronchial mucous membrane, and of the pleura, often extends to the tissue of the lungs ; we have also mentioned, that acute pneumonitis may pass into the chronic form. The knowledge of these diversified phlegmasia, is a great step towards an acquaintance with the disease we are about to consider. Authors have never well understood chronic pneumonitis, if we are to judge by the theories which they have advanced, and the numerous classifications they have established. In this affection, they behold a specific malady, which they call phthisis pulmonalis, and of which they had many forms ; without any other foundation than the predominance of particular symptoms, or the organic lesion found after death. Thus there were tubercular, aposthumous, catarrhal, rheumatic, ulcerated, melanoid, granulated, &c.; but the physiological physician knows, that these diverse kind of disorganization are the product of irritation ; and, that when the disease becomes completely chronic pneumonitis, it nearly, if not altogether, determines finally tuberculous excavation, suppuration, or ulceration ; and is the issue of almost every fatal

*Consumption.

case of chronic pneumonitis. Therefore, we ought to guard against bewildered disquisitions, and unintelligible nomenclature. Whether it advances rapidly toward disorganization, or whether it passes through its stages slowly ;—whatever be the form it assumes, its nature is always identical—it is an irritation, a phlogosis of the pulmonary tissue. The name of chronic pneumonitis is preferred to pulmonary phthisis, because it better expresses the character of the disease. We shall in our division of this affection, consider two varieties : the primitive, or original, and the consecutive or successive. The first, is that which has been preceded by neither bronchitis, pleuritis, or pneumonitis ; the second, is that which has been preceded by the acute stage of these diseases.

As it would be tedious, perhaps useless, and contrary to the design of our essay, to describe the numerous forms of chronic pneumonitis, as related by different authors, we shall confine ourselves to giving the type of those, by which which we shall recognize all others. We shall, in the first place give a cursory view, of the symptoms of primitive chronic pneumonitis. It is preceded by more or less of the symptoms we will enumerate :—slight fever, burning heat, dryness of the palms, humidity of eyes, after sleep circumscribed redness of cheeks, hoarseness, pain in the chest, sometimes in one or both sides, head-ache, frequent fainting, lassitude. In a short time symptoms ensue which leave no doubt as to the nature of the malady :—these are, slight irritation of larynx, cough, hoarseness, weight and con-

striction in the chest ; sometimes hæmoptysis, difficult decubitus on one of the sides ; respiration short, accelerated, accompanied with a sense of suffocation, after walking or ascending stairs ; cough increases as the day declines ; during night it is rending, and followed with mucous purulent expectoration ; the body becomes emaciated, expectoration increases ; matter expectorated is purulent, and sometimes mixed with bloody striæ. Hectic fever supervenes, with all its accompanying symptoms—tongue and mouth red, and covered with aphthæ ; a cadaverous pallor overspreads the whole visage, with the exception of a circumscribed spot on the cheeks. As the disease progresses, emaciation becomes frightful, eyes assume a heavy lustre ; a colliquative diarrhœa ensues, œdema or dropsical swelling of the feet, falling of the hair, nails become curved ; every effort of coughing menaces suffocation ; and finally, death closes the painful scene. The pathognomonic symptoms are, pains in the chest, circumscribed redness of cheeks, hectic fever, cough, and purulent expectoration. In order to discover the physical signs of the diseases of the pulmonary organs. See Physical examination.—Consecutive chronic pneumonitis. In the greatest number of cases, chronic pneumonitis has been preceded either by acute bronchitis, acute pleuritis, or acute pneumonitis. We are assured, that the irritation of the bronchia or pleura has invaded the lungs, or that acute pneumonitis has become chronic, when the pains persist, when there is circumscribed redness of the cheeks, hectic

fever a dull sound of percussion, pectoriloquism, cough, with purulent expectoration. When bronchitis has preceded chronic pneumonitis, it is the upper part of the lung which is first affected ; when it succeeds pleurisy, it is the part corresponding to the pleuritic point. These infallible signs are accompanied with the same sympathetic symptoms, as those which manifest themselves in the course of primitive chronic pneumonitis in an advanced stage. When disorganization has taken place, the symptoms are the same, and confound themselves completely ; no matter what may have been the commencement of the disease.

Chronic pneumonitis may be exasperated by different causes, particularly by cold ; it may assume the acute form, and rapidly carry off the patient ; or become chronic and acute alternately, for a succession of times. Between these two masked shades of chronic pneumonitis, there are others, which may be easily recognized, by comparing them with the description we have just given.

Along with the causes already mentioned, we will state others, some of which may very appropriately be denominated accidental causes. It is acknowledged that a humid, foggy, and cold atmosphere, produces chronic pneumonitis. The atmosphere may become a cause, by the inhalation of foreign particles, with which it is loaded. These particles may belong to the vegetable, mineral, and animal kingdoms. These are the product of the fermentation of plants, such as miasma, &c. when loaded with the vapour of flour, starch,

the dust of hemp, flax graminous grains. All these act by irritating the pulmonary organs, exciting cough, &c. ; Animal particles consist of the air inhaled in the work-shops of curriers, shoemakers, silk factories—they operate by exciting the sanguine capillaries, the secretion, and consecutively the lymphatic fasciculi ; their action is similar to cold, contusion. &c.

It is indubitable, that vapours, either of minerals, pure metals, of the oxides or metallic salts, or of mineral acids, produce chronic pneumonitis. Do not the mercurial and arsenial vapours, mixed with earthy particles, oxides, volatalized salts, which are constantly breathed in mines, forges, foundaries, &c. often inflame the lungs ? And is not the weight of high authority in favour, decidedly, as to their production of tubercular ulceration ? Bloody evacuations, hæmoptysis, suppressed hamorrhages, &c. all give rise to tubercular consumption.

Dr. Brousaïs asks the question, “is ulceration of the lungs, without tubercles, common ?” He says, “If it were frequent, it would be seen in the army oftener than elsewhere ; since, during the winter, and in rather cold latitudes, there is not one patient in fifty in the wards of the hospitals, whose lungs are not more or less irritated or inflamed ; and as, at that time, very few die without having these organs indurated. Now, although I have never neglected an autopsy, I never found ulceration without tubercles, except in one case ; and that was from a ball passing through the lungs,” We therefore conclude, without

saying any thing else, that these ulcerations are rare. And, from the statements of late respectable authority, it appears questionable, that other observers have seen ulcers without tubercles, independent of foreign bodies. They are, at all events, very rare. Critical collections, in consequence of continued fevers, become the cause of chronic pneumonitis. Intermittents may operate in the same way. Rheumatism and gouty pains, may change their situation, and fix themselves on the lungs. The exanthamata, by their repercussion, may produce chronic pneumonitis. The only nervous diseases, which can become the cause of chronic pneumonitis. are those whose paroxysms are accompanied with convulsive actions, and violent congestions in the lungs, and in the large vessels ; such as hysteria and epilepsy.

We may also mention, among the causes, the healing up of old discharging ulcers, atmospheric vicissitudes, abuse of mercury, intemperance, sedentary occupation, excessive venereal indulgence, and onanism. Some authors have agreed to recognize consumption, arising from hypochondriasis, melancholic, and scorbutic diathesis.

Morton, in speaking of those affected with scurvy, speaks of engorged glands, and habitual bronchial affections. Hoffman, and others, especially German and English writers, concur in the opinion of the scorbutic diathesis, favouring the occurrence of chronic pneumonitis. Lind, who has written a valuable dispensation on scurvy, says that it always more or less

affects the chest. But neither of them have ever shown us scorbutic ulcers, destroying the lungs without tubercles. We would conclude, therefore, without any fear of successful contradiction, that tubercular phthisis may be complicated with scurvy ; but that scorbutic ulceration takes place in the lungs.

We shall now mention the causes denominated *predisposing*, or *constitutional*. Predisposition consists in a peculiar irritability of the lung, which renders it more sensible to the irritating agents, and, consequently more apt to contract irritations. There is no age, sex, or temperament, which may not be affected with chronic pneumonitis ; but the constitutions called phthisical, are the most subject to it. They are known by a narrow chest, long and small neck, slender limbs, a tall thin stature, delicate skin, circumscribed redness of cheeks ; in a word, the lymphatic sanguine temperament.

The scrofulous constitution is peculiarly predisposed to tubercles, and consequently to chronic pneumonitis. The organic structure transmits an hereditary character ; therefore the disease frequently passes through families, and is transmitted from one relation to another by hereditary taint ; and in those subjects, exciting causes operate powerfully in giving action to the disease. It is not necessary that we mention many cases, in order to prove the correctness of our position : every physician that has seen much practice, will acknowledge that chronic pneumonitis has been the result or sequæ of bronchitis, pneumonitis,

pleuritis, &c. And we would state, as an indubitable fact, that nearly every case that has been related by practical writers, as the result of the preceding disease or as arising from accidental or ordinary causes, has terminated in tuberculous ulceration. If necessary, we could refer to the exact cases, cited by our most distinguished writers of the present, as well as to much authority from the French school; but shall merely submit the subject to the ten cases related by Laennec—twelve by Broussais—fifteen by Bayle—and the statements from the autopsys of others, such as Williams, Beddoes, Cleghorn, &c.; which all go to prove, that nearly every cast of fatal chronic pneumonitis displays the tubercular excavation, on post mortem examination. There are some affections, we will admit, that resemble chronic pneumonitis, and terminate in different disorganization; but we will venture to assert, that it rarely happens that complete chronic pneumonitis terminates fatally, in any other way than by tubercular ulceration. We shall relate some cases, when we come to the treatment of this disease, which may be interesting and important.

We have now passed through the diseases of the pulmonary organs, and we have been particular in giving as comprehensive a view of this part of our subject, as we possibly could, without superseding the design of our essay.

The next thing, that presents itself to our consideration, are the diseases of the heart. To the man of mechanical genius, and philosophical discrimination,

it must be a subject of astonishment, that the principles of hydraulic machinations, on which the heart is constructed, should continue its uninterrupted motion, for a long series of years, without serious damage to its works. Even the physiologist, knowing that this organ is continually exposed to the impression of physical agents, and the reaction as the result, would hardly expect that the heart should escape the shocks daily and hourly given to it, in its hurried contraction, by every mental emotion, and accelerated muscular movement—added to the periodical stimulations, which it receives from the calls of appetite, and their subsequent gratification. There is not a sense, or sentient surface of the animal economy, but what, if much excited, will call the heart into responsive sympathy: not a faculty of the mind, that does not, in a state of tension, act powerfully on this organ, either by diminishing, disturbing, or accelerating its functions. Why then, it will be asked, does it not suffer, as both mechanics and physiologists would lead us to suppose? Later information enables us to reply, from the authority of assiduous examination, that this organ is materially affected, and does suffer functionally and organically. (See the works of Senac, Burns, Corvisart, Testa, Bertin, M. Piorry, Laennec, Johnson, &c.)

The equal and regular distribution of blood, to every part of the system, is of primary consequence to the well-being of all other functions of the body. The blood is the pabulum of the secretion, the source of the

sensorial power itself ; and hence, any disturbance in the functions of the heart, is sure to derange the actions of other organs, and materially affect the brain, together with the various functions dependent on the nervous system.

There is no disease, to which the human frame is incident, which occasions such mental and bodily sufferings, as organic and functional disorders of the heart. It is impossible for us to enter into the minutiae of all the diseases of this important organ, as it would cause us to transcend our bounds ; but we will endeavor to present a general outline of the principal phenomena, exhibited in its organic and functional derangement ; and perhaps mention some particularities.

The cast of countenance and complexion are generally altered from the natural state, in organic affection of the heart. The subcutaneous vessels of the face are more or less distended ; and the skin, suffused lips, *alæ nasi*, and sometimes the ears, exhibit a livid hue ; face puffed and bloated, and the expression of countenance is peculiarly indicative of internal anguish. The breathing is mostly affected, being generally short and laborious, especially when walking on an ascent ; and indeed a flight of stairs cannot be ascended, without a sense, and absolutely a danger of instant suffocation. (See Testa and Johnson on the heart.) This is accounted for thus, viz : in going up a steep ascent we lift a burden equal to our own weight additionally ; this produces a general action of our muscles, whereby the venous blood is pressed from all

parts of the surface towards the heart ; which, in its over charged state, is unable to support an equality of excitement. Hence the blood accumulates in the two cavæ, and in the veins of the lungs.

Sometimes the palpitation is stronger or weaker than natural ; sometimes it cannot be felt, when there is active enlargement of the heart and its cavities to any great degree. The pulsation of the organ will not only be visible to the eye, but may often be heard at some distance ; and its force will sometimes be sufficient to make the whole bed under the patient to tremble and vibrate.

The pulse very frequently participates in the deranged rythm ; varying from a slight occasional intermission, up to the wildest, and most tumultuous irregularity, or down to a fluttering wiry state. In this disease, however, as in most others, the pulse is not to be depended on alone.—The urine becomes scanty, thick, or lateritious ; and this deranged state of the urinary secretion ultimately tends to effusion in the cellular substance, and into the thoracic or abdominal cavities, The sleep is generally disturbed, unrefreshing, and interrupted by frightful or disagreeable dreams. In some cases, there is pain in the region of the heart ; but more generally, the patient describes it as a sense of tightness or oppression.

These are the symptoms generally attendant on diseases of the heart, and which can be physically accounted for. But in many cases there are various symptoms, which cannot be explained, on any known

pathological principle. They are, however, to be most carefully attended to in practice ; since they will often lead to a detection of the complaint, when the more regular symptoms are absent or equivocal, as they often are. Mental despondency is one of the signs. Some writers on the diseases of the heart, say that they never knew this symptom wanting ; and it is one of the most appalling nature, and of the deepest hue.

One of the most curious phenomena attending diseases of the heart, is the sensation of some distant seated pain or pains, between which and the cardiac affection, no possible connection or affinity can be traced, by any known law of the animal economy. One of these is, a pretty constant pain in the guard of the left arm, and little finger of the same hand ; it is a very general attendant on valvular disorganization, and that peculiar affection called angina pectoris. Pain, and most unaccountable sensations, are frequently complained of in the legs, shoulders, or head ; a heavy weight or pain just above the pubis, is not unfrequent. Such is the outline of the more prominent symptoms, attending diseases of the heart in general.

We shall now, before we descend to any individual form, mention something of the causes which led to these affections, Corvisart considers diseases of the heart, as next to those of the lungs, in frequency. In this, however, we believe he is mistaken ; although they occur oftener than practitioners are generally aware of : and it is only within the last twenty or

thirty years, that they have begun to excite much attention.

The causes which are assigned for organic derangement of the heart, are the play of the passions, such as joy, anger, love, ambition. But there are numerous subordinate causes of cardiac derangement, which act slowly and imperceptibly on this organ : such as violent exercise, jumping, wrestling, running, &c.—Straining of the lungs, by blowing too hard on wind instruments ; immoderate laughing ; intemperance in drinking ; certain trades and professions, in the exercise of which the body is kept in unnatural positions, that obstructs the free passage of blood through the vessels ; are efficient causes of cardiac affections.—Consequently, tailors are very subject to this disease. From the intimate connection between respiration and circulation, a fertile source of cardiac diseases is to be sought in the lungs ; and in some cases, this malady is said to arise from hereditary taint.

In making mention of particular diseases, we will consider the pericardiac envelopes of the heart, the muscular structure, and the internal valvular and ventricular apparatus.

The pericordium* may be inflamed on its external surface, and not the internal. In the distinction drawn, as long as the disease is confined to the pleural or external covering, it does not differ essentially, either in symptoms, treatments or prognosis, from

*The membrane that invests the heart,

pleuritis, or pneumonitis. Whereas, inflammation of the internal surface is a disease of quite another character ; requiring a modification of treatment, and being infinitely more dangerous.

Inflammation of the heart and its coverings, like most other inflammations, assumes several degrees of intensity ; which may however be reduced to two grades—the acute, and chronic carditis.

Carditis* is defined by Cullen thus : “Pyrexia dolor in regione cordis, anxietas, spiritus difficilis, tussis pulsus, inequalis palpitatio, syncope.” But he is wrong, in as much as he combines the characteristic symptoms of pneumonitis and carditis ; this is incorrect ; for carditis does frequently exist without cough, difficulty of breathing, so commonly attending pleuritis and pneumonitis. The most pathognomonic symptom of cardiac inflammation, perhaps, is that peculiar anguish, which is felt in the region of the heart, and which has been represented as one of the most distressing sensations ever experienced.

The acute carditis is a most formidable disease, and often accompanied with most distressing symptoms. There is often a pungent burning heat in the precordial region ; the mind is greatly affected ; and the expression of suffering, or even horror, in the countenance, is truly characteristic. The pulse is generally irregular ; there are wandering pains ; the symptoms go on increasing in severity, until in a few days death

*Inflammation of the heart.

puts a period to the patient's suffering, or a vigorous treatment checks the inflammation. The form approaching to the chronic state, which by some has been called sub-acute, often continues for months, before it terminates either way ; and the chronic form may harass a patient for years.

We now come to the individual derangements of structure, affecting the heart ; and the form of disease will be known to be acute, or chronic, according to the intensity of the symptoms.

Hypertrophy Symplex, or active aneurism of the heart, without dilatation of its cavities.

This disease, however, is not common ; it is an augmentation and condensation of the muscular structure, and consequently of the ventricular parietes of the heart ; it may affect one or both ventricles.

Signs of hypertrophy of the left ventricle :—In addition to the general symptoms, as already described, may be mentioned, a strong and full pulse ; strong pulsation of the heart, in the left side, equally felt by the patient and hand of the practitioner ; a want of sound on percussion of the cardiac region. When the cylinder is applied between the fifth and sixth ribs, the contraction of the left ventricle will communicate a very strong impulse, accompanied with a sound much more dull than in the healthy state of the parts ; auricular contraction, short, and a little sonorous ; and the patient experiences a constant sense of the heart's action. (See Laennec and M. Piorry on auscultation.)

Signs of hypertrophy of the right ventricle:—According to Corvisart, there is a greater tightness of chest in respiration, than in the former affection.—Laennec puts down pulsation of the external jugular veins, a sign of active aneurism of the right ventricle ; and this phenomenon is confirmed by Laennec, in every considerable case. The same phenomena presents when investigated by the stethoscope ; as in affections of the left ventricle.

Signs of dilatation of the left ventricle :—The only certain diagnostic is, a clear sound transmitted through the stethoscope at each contraction of the heart, when the instrument is applied opposite the apex of this organ—all other signs are fallacious.

Signs of dilatation of the right ventricle :—In general, the face exhibits a considerable degree of livor ; yet it is often extremely pale, and leucophlegmatic.—But the most certain pathognomonic sign of ventricular dilatation of the right side, according to Laennec, is the clear and distinct sound or noise, produced by the heart's action, when explored by the stethoscope, applied to the lower part of the sternum, or between the ribs of the left side.

Dilatation of the ventricles, with hypertrophy, or the thickening of their parietes. The combination of these two affections is extremely common. This is the active aneurism of Corvisart, and may take place in one or both ventricles at the same time ; and when it occurs in both it sometimes acquires a prodigious

volume, twice, thrice, or even four times its natural size.

The signs of this disease are a combination of those attending simple dilatation and simple hypertrophy.—The ventricular contractions will produce a strong impulsion and a well marked noise; the auricular contractions being quite sonorous through the stethoscope. The cardiac pulsations are heard, over the great extent of the thorax; they can be distinctly felt and seen in the cardiac region. The carotids, radials, &c. will give evidence of this morbid action. The pulse is fallacious. The cylinder, applied alternately, and to the lower part of the sternum, will give the indications, whether one or both ventricles are in a state of active enlargement.

Valvular disorganization.—The heart is subject to ossifications of its valvular apparatus, and they are almost exclusively confined to the left side of the heart. Two inconveniences result from induration or ossification of its valves:—first, by their thickening and immobility, they obstruct the free passage of blood from the auricle into the ventricle, and from the ventricle into the aorta; in the second place, by their immobility, they cease to perform the office of valves. The derangement resulting from this state of things, may be readily known. The diagnostic symptom is a murmuring noise, or tremors, which is compared to the purring of a cat. The constitutional symptoms are the same as those attending diseases of the heart in general.

The heart is subject to a great many more disorders of structure, than are here enumerated ; such as fatty degeneration, a flabby and rotten state of the muscular substance, an induration, and an atrophy, or wasting of the organ ; but the characteristic symptoms attending these states are not completely ascertained, and their diagnosis must depend on the observation of future pathologists. And it is to be recollected that, of all diseases, those of the heart are the most difficult to ascertain, by any one set of symptoms, or means of diagnosis. The whole history of the cases are to be investigated ; and then percussion, and auscultation to be employed, in aid of the general phenomena.

The degree of danger, in these cases, is commonly in proportion to the degree of interruption in the functions of respiration and circulation. Whatever may be the amount of disorganization in the heart, if the breathing can be performed with tolerable ease, and if the blood does not stagnate in any part of the body, life may be preserved for a long time ; and, vice versa, although the health of the patient may be comparatively comfortable, still we must bear in mind, that sudden death is a common termination, in this distressing class of complaints. And here we shall digress a little, on the subject of sudden death.

We would remark, that every man of observation must have detected the distress occasioned in the head, by derangements of the heart ; and especially active enlargements, accompanied with inordinate action of the diseased organ. Dr. Johnson mentions two at-

tacks of apoplexy, which, according to his candid opinion, were determined by active enlargement of the heart. This opinion is confirmed by M. Brichteau, of Paris ; and the death of Malpighi, according to the account of Baglivi, was occasioned by this connection. Gibbellini details a similar case ; and Lieutaud another. But M. Richerand seems to be the first, who distinctly traced apoplexy to aneurism of the heart.—He has stated an instance in point, of the late illustrious Cabonis, who perished by a fourth attack of apoplexy, in the spring of eighteen hundred and nineteen. On dissection, the left ventricle of the heart was enlarged to thrice its volume ; and its walls increased to triple their usual strength. But M. Brichteau has been able to collect a great body of evidence, between cardiac aneurism and apoplexy. Thirteen cases are detailed, in the fourth number of the *Medico-Chirurgical Journal*.

From what has been stated, we have reason to conclude, that the late increase of diseases of the heart has contributed considerably to the increase of apoplexy, and perhaps to many nervous disorders.

The translation of rheumatism to the heart, is a subject of modern observation, which would induce us to believe, that new forms of disease spring up, from time to time, in consequence of the varying state of the moral and physical causes, and the predisposition thus resulting. Dr. Baillie, on the authority of Pitcairn, gave the first account of this metastasis ; since which, many cases have appeared in periodicals, and

other publications. Sir David Dundee, in a paper read before the Medico-Chirurgical Society, in November, 1808, draws the attention of the faculty to this subject. He met with nine cases during his practice. The symptoms were, great anxiety and oppression at the præcordia ; dyspnœa, acute pain in the region of the heart, great palpitation, noise in the ears, giddiness in the head, pulse quick, irregular and hard ; towards the close of the disease, symptoms of water in the chest are developed, with swelling in the legs, and frequently ascites.

These cases all succeed to one or more attacks of acute rheumatism ; and all the patients were very young ; six males, three females. Most of them struggled with the complaint many months ; seven died : one is doubtful ; the other recovered, from rigid adherence to vegetable diet and repose. Post mortem examination of six cases. Uniform in their appearance ; heart enlarged, pericardium adherent to the heart, substance of the heart pale, soft and tender. Numerous other cases might be mentioned, but this will suffice.

We will now return from the digression.

Having passed through the diseases of the chest we next come to the therapeutical part of our essay ; and the next thing that presents itself, is the treatment of acute bronchitis. We shall mention first the general indications before we descend to particulars.

The general indications to be fulfilled are, to moderate the excitement of the sanguinous system, by local

and general bloodletting, by mucilaginous and aqueous drinks, slightly acidulated, by abstinence from food. The patient should be kept in a state of absolute rest, free from exposure to cold.

Stahl made use of the aqueous vapour inhalations, which he called bathing of the lungs. Perspiration should be gently aided; the bowels should be kept open. Along with the general points, we shall mention, that emetics are highly spoken of in this affection; they usually procure immediate relief of the oppression in the chest, and dyspnoea; while, at the same time, they excite a general diaphoresis, and promote a free expectoration. They are also well calculated to expel the viscid mucus, that clogs the bronchial cells; thus facilitating respiration, and sustaining the powers of the system. We have generally used the tartarized antimony, and found it calculated to produce the most powerfully relaxing effect. Expectorants are also useful in this affection.

In the early period of the disease, mucilaginous mixtures, or antimonials, should be employed for this purpose; such as hive sirup and elixor paregoric combined, or antimonial wine, paregoric, mucilage gum Arabic, spts. nit. æther, and laudanum combined. But after the general arterial excitement has been reduced, and especially when the bronchial cells are clogged with matter, from debility of the organs, we have found the gum ammoniac mixture the best prescription that ever we have used. It consists of

R.	Gum Ammoniac	2 drachms,
	Nitric Acid	2 drachms,
	Elixor Paregoric	$\frac{1}{2}$ oz.
	Water, pure	6 oz.

Pour the nitric acid, diluted in eight ounces of water, on the ammoniac, to be triturated in a glass mortar, till the gum dissolves, forming a milky fluid ; of this a table spoonful every two or three hours.

This recipe has proved highly beneficial, in our practice, especially in old subjects. When the pulse becomes very small and weak, some of the more active stimulents should be exhibited, along with expectorants ; especially in old subjects, and broken down constitutions. For instance,

R.	Pulverized Camphor	2 scruples
	Gum Arabic	2 drachms
	Syrup of squills	1 oz.

Triturate them in a mortar, then gradually add

	Pure water	1 oz.
	Laudanum	40 drops

Mix. A table spoonful every hour or two—

R.	Carbonate of Ammonia	2 drachms
	Extract of Liquorice	$\frac{1}{2}$ oz.
	Pure water	6 oz.
	Vinegar of Squills	$\frac{1}{2}$ oz.

Mix. A table spoonful every two or three hours.

Dr. Hoffman declares that in this state the following combination has often in his hands, afforded complete relief in cases apparently hopeless.

R.	Flowers of Benzoës	6 gr.
	Pulverized Camphor	6 gr.
	Loaf Sugar	1 scruple

Mix. This is to be taken for a dose.

Dr. Hastings states that in the bronchitis of old people, he has given opium and calomel, in the proportion of half a grain of the former to two grains of the latter, every three or four hours, with much benefit. We have found Dover's powder, or opium and ipecacuanha, given alone, esppecially at night, by producing a gentle diaphoresis, afford much relief.

Blisters are indispensable, when there is much constriction over the chest, accompanied with pain and oppression.

A regulated temperature of atmosphere, in the patients chamber, is very important : the air of the room should be kept comfortably and uniformly warm, so as to favour the action of the cutaneous exhalents. During the debility which generally remains, after the disease has been subdued, benefit will be derived from mild and nourishing diet, and the use of certain tonics ; such as infusion of Cinchona, Colombo, Gentian, &c. The clothing should be warm, in order to preserve a uniform temperature ; the mind should be kept tranquil, and cheerful ; all violent excitement

should be prevented, whether of a moral, or physical nature ; and if complicated with any other disease, to be treated accordingly. In the treatment of chronic bronchitis, we have several indications to fulfil : 1st. to diminish the general susceptibility, and keep down the excitement of the circulation : 2nd. to correct the functional disturbance of the exhalent system, and alimentary canal ; and lastly to determine from the lungs, and consequently invite the fluids towards the skin.—In the incipient stage of the disease, when the pulse is frequent, the expectoration difficult, and the cough severe, and accompanied with more or less oppressed respiration, weight, and uneasiness in the epigastrium ; we are to resort to general bleeding, especially when the patient is strong ; but when the patient is debilitated, and especially when his constitution is impaired, it would be the safest plan to resort to local bleeding, by cupping and leeching—and especially the latter. Drs. Begins and Brousaïs, recommend emollient topics to the chest. The inhalations from warm water, vinegar, expectorant gums, emollient decoctions, &c. have been highly recommended by some practitioners : for instance, Chapman, Begins. (See their treatise on therapeutics, with notes on the latter by Xavier ; Tessier, Eberly's Practice of Physick ; North American Med. and Surgical Journal, by Murray, on inhalation.) These authors recommend the use of inhalations, as calculated to prove beneficial, when properly used. We have found them sometimes to be exceedingly useful. A regular action

of the cutaneous exhalents should be kept up ; and, for this purpose, the patient should wear flannel next the skin, and protect himself with proper clothing against the influence of cold and sudden atmospheric vicissitudes. A damp, variable, and inclement atmosphere should be avoided, as much as possible. When the weather is mild, exercise in the open air will prove salutary. External irritating applications, are among the most useful means of combating the disease ; perpetual blistering, or pustulation by frictions, with tartar emetic ointment, or white precipitate ointment.

These two last are calculated to keep up a permanent and efficient irritation, and are particularly and admirably well adapted to the case. Setons and issues are highly spoken of, by some writers, but we do not think them equal, in their good effects, to the irritation derived from a more extensive surface. Mild emetics are also useful in this affection, by dislodging the viscid secretion, by which the bronchial cells become engorged. Digitalis may be advantageously employed, towards the advanced stage of the disease ; especially when the cough becomes chronic. It may then be combined with opium or expectorants. The Tr. Colchicum has also been highly spoken of. We have found the squills, when properly prepared, well calculated to moderately stimulate the lungs, and promote expectoration. Some of the vegetable balsams have, of late years, been particularly recommended, in chronic bronchitis ; and of these, the balsam copaiva is one of the best remedies we have ever used. Dr.

Armstrong observes, that this article seems, in many cases, to exert a specific influence over the mucous membrane of the trachea and its branches ; it increases the flow of urine, keeps the bowels open, and sometimes excites a peculiar itching in the skin. It may be given in doses of from thirty to forty drops, three times a day : it is more effectual in the advanced periods of the disease. It may also be given as follows :

R. Sub Carbonate of soda	1½ drachms.
Yelk of an egg	
Loaf Sugar	½ ounce.
Balsam Copaiva	1 ounce.
Pure water	8 ounces.
Laudanum	40 drops.

Mix. A table spoonful three times a day.

Mucilaginous and demulcent drinks are highly proper ; such as solutions of gum arabic, or tragacanth, mucilages of flax seed, mallows, mixed with large quantities of water ; sweet oil emulsions, barley water, bran tea, flax seed tea, with expectorant syrups. Peruvian bark has been recommended by Broussais, with gum arabic solution, when anorexia and debility occur. When there are night sweats, and general debility, the bark given with diluted sulphuric acid, or the sulphate of quinine, is calculated to arrest the night sweats, and invigorate the frame. Opium is often decidedly useful, especially when combined with ipecacuanha ; it facilitates the transpiration, and prevents fits of coughing for whole nights : it may also be given in the form of Dovers powder. It always produ-

ces relief, when properly administered, and materially assists other remedies, in the reduction of bronchial inflammation.

The extract of *cicuta*, and *hyosciamus*, with *ippecacuanha*, on the principal of its narcotic operation, by allaying irritation and cough, and improving the character of expectoration, has been found to be useful.

The prussic acid has been employed by some practitioners, with benefit on this affection.

In the administration of this remedy, it requires the utmost caution and attention. The inner bark of the *ampelopsis hedra* has been used with much advantage, in the advanced stage of chronic bronchitis; it is given in decoction, in the proportion of an ounce of the bark to a pint of boiling water, of which a wine glass full is to be taken four times daily. (See Dr. Atkin's paper, in the Philadelphia Medical and Surgical Journal, October 1826.)

The bark of the white willow, and the root of the *actix mecmosa*, has proved useful. The *asclepias decumbens* is known, as a popular remedy in chronic coughs. When this disease is complicated with hepatic affections, mercury must be administered, in conjunction with other remedies. (See Begins Therapeutics.)

Chronic bronchitis, with other modes of irritation, requires no change in the curative plan, other than whatever disease it is complicated with: they must be treated on the principal laid down in such cases.—Whoever will study this disease closely, and the pre-

cepts naturally arising from it, will find it necessary to combat the varieties arising from seasons, localities, circumstances, and differences of constitution. As models for the application of them, we will relate two or three cases, which terminated favorably :

Case 1st. By Broussais.—Dupnee, aged twenty-four, black hair, delicate skin, medium height, and a little muscular, had been subject to bronchitis ; but never experienced it so obstinate, as that for which he was sent to the hospital of Woerdim. He stated, that being in a perspiration, about thirty-seven days previous, he became chilled whilst washing clothes ; from which time he began to cough. The cough became violent, expectoration bloody, breast pained. He was under treatment for a month, by blisters on the breast, pectoral and anodyne juleps. The symptoms still continued ; they consisted of a loud, harsh, painful cough, almost incessant during the night, with difficult expectoration ; of a clear and viscid mucus, often tinged with blood ; he but seldom slept—skin almost always moist, face flushed, pulse natural, rather feeble. The patient was oppressed and harrassed ; leeches were applied to the breast, followed by epispastics ; pectoral gummy drinks, expectorants, a vegetable diet, &c. At the end of six days, he was relieved, his appetite restored, and in a fortnight Dupnee was sufficiently recovered to be allowed a nourishing diet, and to leave the hospital, about fifty-two days from the commencement of the attack.

We here see a pure case of chronic bronchitis,

which was removed by a persevering mode of treatment.

We shall now mention a case of our own, which will show the efficacy attending a persevering and rigid mode of treatment.

M., aged about thirty, rather tall, and of slender delicate make, contracted thorax, white and soft skin, desired me to visit him ; stating that he had been sick for several weeks, labouring under a cough, accompanied with lassitude, pains in the back, limbs, slight fever, and a sensation of chilliness. He still continued to work, and expose himself to the inclemency of the winter, until his disease became so serious, that he was obliged to desist, and put himself under medical treatment.

His cough increased, his fever became more violent, skin hot and moist, expectoration thick, opaque, and very abundant ; voice became hoarse, cheeks sunken ; dyspnœa increased to such an extent, in two or three days, that he was obliged to assume an erect posture. He rapidly became emaciated ; and, after attending him about four weeks, the fever disappeared, his extremities became cold, with cold clammy sweats over the neck and breast. But having revived, (the disease still, however, prostrated the powers of the system, he spitting much,) his face and extremities became infiltrated. About this time the disease began to abate, his appetite began to return ; although he still coughed at night. The symptoms, neverthe-

less, in a short time completely subsided ; and he left the place in excellent health and spirits.

This case presents an instance of bronchitis, induced by cold, kept up and rendered chronic by the same cause, aggravated by exercise and exposure, and again becoming chronic, with exhaustion of the patient, and finally terminated by a complete resolution.

In the treatment of this case, the direction, taken by the disordered state of the system, was studied to be reverted during the febrile state ; venesection, topical bleeding, cataplasms, and blistering were employed ; but as his strength began to fail, it was necessary to make use of stimulating expectorants, and anodyne diaphoretics, with the view of keeping down the cough, exciting the capillaries of the surface, mitigating the pain, and removing the sleeplessness arising from it.

The infiltration suggested the propriety of using squills combined with tonics. The appetite, which had always been deficient, became better ; and was the signal of a successful change.

This case proves, that although the disease may put on apparently hopeless symptoms, it is very difficult to duly consider a man's strength, and to assign any limits to the restoration of an organ, labouring under inflammation. And it particularly displays, that neither hectic fever, the œdema, nor the yellow colour, are certain signs of disorganization of the lungs. It also proves, that a physician should never

abandon his patient, nor give him up, however far the pulmonary affection may appear to be advanced.

We now come to the treatment of acute pleuritis.— Bleeding is the first, and most important remedy.— The extent to which it is to be carried, must be regulated according to the pain, cough, difficulty of breathing, and hardness of the pulse.

As long as the pain, cough, dyspnœa, and firmness of the pulse, remain, the physician may with safety bleed ; and a sufficient quantity of blood should be taken from a large orifice, to produce a decided impression on the circulation, a relief of pain and oppression in the chest.

The bleeding should be repeated, according to the urgency of the case, and continued until the violence of the disease is broke. After the disease has been subdued, and venesection is no longer indicated, cupping and leeching will be useful auxiliaries, and should not be omitted. In this situation, digitalis will contribute to the further reduction of the general and local excitement. Active purging is generally considered improper ; but gentle aperients are decidedly beneficial. Cooling diaphoretics are useful auxiliaries ; for instance, the pulvis antimonialis, nitre with antimony, neutral mixture, spts. mindereri. Richter particularly recommends the last mentioned preparation.

With a view of diminishing the action of the heart and arteries, and promoting expectoration, nauseating doses of tartar emetic are manifestly beneficial. Ras-

sori, and his followers, make this the principal, and, in some instances, almost the sole remedy. Laennec speaks decidedly in favour of large doses of antimonials, in acute pulmonary affections. There is no doubt, when properly administered, this medicine has a good effect; calomel and opium has been strongly applauded, by some practitioners, in this affection. Our own experience has satisfied us of the great utility of this practice; and especially, when combined with ipecacuanha.

After the excitement is reduced, it has a tendency to increase the expectoration, determine to the surface, and complete the resolution, better than perhaps any internal remedy we possess. Richter states, that when inflammation of the pulmonary organs is the consequence of repelled cutaneous eruptions, such as rubcola, scarlatina, or of irregular gout, camphor, with ipecacuanha and opium is a highly useful remedy. Expectorants ought to be used, after the violence of the inflammation is subdued by venesection, &c. In the early stage of the disease, the antimonials with kermes, mineral demulcents, with mucilaginous fluids and mixtures, are alone proper; but when the violence of the disease has been moderated, and the inflammation is about terminating in resolution, opium with tarter emetic will assist materially in establishing the expectoration. The polygala seneka infusion may also be used, with demulcents and mucilaginous drinks. Blisters are among the most valuable remedies, in subduing pneumonic inflammations.

In protracted cases, where symptoms of effusion are present, a combination of calomel digitalis and squills have been found particularly serviceable; and in cases that terminate in empyema, paracentesis thoracis is recommended.

For instances of successful paracentesis thoracis, we would refer to the works of Gregory, Werholf, Donald, Monroe, Stahl, Richter, Hoffman and B. Bell.

The sequelæ of this affection is to be treated on the principal of medical science.

The next thing that presents itself in order, is the therapeutical part, or treatment, of Chronic Pleuritis. —When this affection is evident, it may be attacked sufficiently early, to obviate the fatal consequences which most likely would be induced. It is true, in this as well as other disorders, that the sooner our remedies are applied, the greater is the probability of success; and the more closely should the treatment be conducted, in accordance with the principles we have laid down, for the cure of the acute form.

When, from the excitement of the circulation, and symptoms which occur, we conclude that the phlogostic action of the capillaries is perpetuated; we must continue the antiphlogistic plan, with aqueous and mucilaginous drinks, proscribe the use of animal food, and make use of rich soups with extreme caution; and never satisfy the appetite, even with such food as is most appropriate to his situation.

Brousaïs states, that if the pulmonary parenchyma

is in a state of suffering, either from the effect of compression occasioned by the accumulation of fluid in the pleura, or from the late phlogosis that this compression keeps up, it cannot concur in an efficacious manner to the assimilation of chyle, or to the oxygenation of the blood ; consequently he infers the absolute necessity of abstinence ; that by reducing the patient to a severe regimen, it will sooner cure the hectic fever, than by repeated bleeding, and a multiplication of ex-tories. He says, it is always by diet, that he has calmed the febrile action that has supervened during the progress of chronic pleurisy. The more rigid it was, the less the patient lost his strength, because he was sooner restored to a state of calm and apyrexia. We presume, however, that the patient should be allowed light nourishment, when the fever continues, and the appetite is great ; for we believe the irritation, arising from the intensity of appetite, would add very much to the aggravation of the symptoms. We also believe, he only alludes to the febrile action, suddenly occurring, during the quiescent state or calm ; diet will then generally accomplish the desired end, at least in a very great degree. If an obstinate pain in any part of the chest lead us to apprehend developement of chronic pleuritis, local bleeding is to be employed at once ; and sometimes it is necessary to resort to venesection, perpetual blistering, or irritation kept up by cauteries, tartar emetic, and white precipitate ointment, &c. These are means of revulsion, and should never be neglected. Cataplasms and frictions are use-

ful : mild sudorifics and diuretics are also beneficial. These means should be assisted by rest, avoiding all exertion, calming the cough ; and particularly regimen, which should be nourishing and easy of digestion. By a perseverance in this plan of treatment, we shall succeed in calming the irritation and removing the inflammation : there is no doubt of our success if the phlogosis has not irreparably injured the tissue.

These views display to us, how important it is to attack the disease in the bud ; and never to vacillate in our treatment, from the time we are satisfied of the nature of the case.

In the advanced stage of the disease, when the complexion is altered, and the sound is dull on percussion, when the symptoms evidently develop an effusion, or the formation of a false membrane ; can chronic pleuritis, even then, be treated with success ? We can only oppose it by a continuation of the means already advised. Although this be fundamentally correct, there are nevertheless, circumstances more common at this period than at any other, which require particular remedies ; for instance, the serous predominance which takes place in pleurisies that are wholly indolent, and unattended with fever. And an increase of oppression, and dyspnœa, result from it, which is to be treated by diuretic potions, decoctions of squills, frictions, inunctions, revulsives, &c.

Palpitation and irritation of the heart, require the antiphlogistic plan, as long as the patient is vigorous, his complexion fresh, flesh firm, &c. But as soon as

these functions deteriorate, and the serous diathesis takes place, we are to act according to the plan of asthenic dropsy. Opium combined with squills is advantageous, when anxiety and sleeplessness are added to dyspnœa. Compression is of great service, provided the dropsy is not obstinate : a roller may be applied extending from the feet to the groin.

When effusion or false membrane occurs, query, is it possible to induce a re-absorption of these foreign bodies, the developement of the wasted lung, and the re-adhesion of the-inflamed surface ?

It is known, that the most liquid part of the effusion is re-absorbed ; but is it possible that this caseous matter, the result of the detritus and decomposition of albuminous exudation, may be again taken up by the inhaling orifices ? and if not, will it always form an obstacle to the adhesion, which must be formed for the cure to take place ?

Without doubt, fallen from its pristine state, it no longer possesses the qualities, nor serves the purposes, of living fluids. It would be worse than useless in most cases, to depend on curing this state by the operation of empyema : if it ever does succeed it is extremely rare.

When the lobe cannot develope itself, the cavity contracts ; and the two pleura, although degenerated, cartilaginous, &c. adhere. Life is a long time compatible with such a state.

After having explained the principles of the treatment, which appears, from the best authority, and our

own views, best adapted to chronic pleuritis ; it now remains for us, to demonstrate the utility of the measures we have advised, by reporting two or three cases, which will also contain some therapeutical details.

Case 1st. See Brousaïs on inflammation.

Roubret, aged twenty, dark complexion, slender, pale, contracted chest, entered the hospital of Udine, the 13th. of April, 1807, for a chronic affection. He stated, that eighteen months previously, with two of his brothers, he had experienced an acute fever, from which the latter had perished ; he however, was cured, with the exception of a pain remaining in the left side. Under these circumstances, he was obliged to travel in the baggage wagons, in order to join the corps. During this time, he coughed much, expectorated an abundance of muco-sanguinolent sputa : he re-entered the hospital of Udine, and presented the following symptoms :

Face lengthened, expression of pain, dyspnœa, bubbling respiration, with a convulsive grasp at each inspiration, sensation of suffocation, compression, frequent fits of violent coughing, expectoration of mucus mixed with blood, pain in the side severe, augmented on pressure, pulse frequent, active and developed.

Rigid diet, demulcents, emmollients, fomentations, and cataplasms, general and local bleeding. On the 23d. April, fourteen days after his arrival, the pulse was about the healthy standard, but weak and irritable ; the chest still painful ; expectoration thick and abundant.

Vegetable, milk, and demulcent diet; irritants, some doses of opium. On the 16th of May, appearances of convalescence. It was sometimes necessary to diminish the quantity of blood; pulse still a little hard, and thrilling. 1st June—Perfect health; the chest bears percussion. He was discharged a few days afterwards; but at the end of the month he was again re-admitted, suffering almost as much as on his first admission. The same means were employed, with the same success; and after some time, he was again discharged in a sound state.

In this case, we recognize a chronic pleurisy of eighteen months standing, which suddenly became complicated with inflammation of the parenchyma.—This inflammation was mitigated by regimen, antiphlogistic medicaments; but the pleuritis was not perfectly cured, until the last—as was proved by the relapse supervening two months later.

Case 2d.—In the fall of 1827, I was called to see a man aged about twenty-five years, dark complexion, rather corpulent and robust, affected with pain in the left side; from this time he had laborious respiration whilst walking, and particularly when ascending stairs, with fits of coughing. Four months passed without any other complaint. But on the first of April following, a febrile action of a very violent nature took place, accompanied with symptoms resembling pleuropneumonitis. He was several times bled from the arm: blood was also drawn from the affected side by cupping. Regimen, and the antiphlogistic

plan of treatment was rigidly pursued ; and about the last of May the inflammatory symptoms entirely subsided, appetite returned, and every thing put on a favourable aspect. But in three or four days following, in consequence of impropriety in living, the fever returned, and the cough became dry.

On particular examination, I was convinced that the apyrexia did not exist, except during the day ; and that the nights were always marked with febrile exacerbations. The complexion became straw coloured, there was no increase of strength, the side was obscurely pained, and returned a dull sound on percussion. I suspected there was chronic pleuritis.

The interrogatories put to the patient furnished a detail of facts and symptoms, which sufficiently detected chronic pleuritis, that had in its progress implicated the parenchyma, but returned to its original simplicity. The patient was treated with demulcents, expectorants, anodyne, diaphoretics, such as Dover's powder, ipecacuanha, opium, calomel, sal. nitre combined, mucilaginous drinks, farinaceous and digestive food, though sparing in quantity. The disease from this treatment having apparently subsided, he again acted improper in the use of diet, and exercise ; and consequently, the oppression, cough, and pain were renewed. The patient was again placed on his former regimen ; the tartar emetic ointment was applied, and the sore kept open for a month. The patient felt so well that he again resumed his ordinary business.

More might be said on this subject, but we fear we

have already said too much. This case will show the efficacy of our art, by perseverance and rigidity of treatment, in arresting this disease, when the symptoms indicate an apparently hopeless situation. A certain writer says, that "nature has a thousand modes of correcting disorganization, or of supplying what is deteriorated ; and I now cure chronic pleuritis, of which I formerly would have despaired. It is to the repetition of local bleeding at the commencement—regimen during the progress, and irritants or cauteries at the advanced stage, that I owe this success."

In the treatment of acute pneumonitis, we would consider it unnecessary to enter into any particulars, as we are assured, that the physician who completely understands the therapeutical part of acute pleuritis, will be able to treat, successfully, acute pneumonitis. The general principles are the same ; and whatever particular treatment is requisite, the judgment of the practitioner will be sufficient to develope.

With respect to the diseases comprehended under this inflammation, they must be treated on the general principles of medical science.

Treatment of Chronic Pneumonitis.—This is emphatically the place for the application of the maxim, "principias obsta." The essential point, is to arrest the inflammation in its bud ; as this is the only means of preventing disorganization.

Chronic pneumonitis being generally the result of bronchitis, pleuritis and acute pneumonitis, care should be taken to remove these inflammations in pro-

per time, by the means already pointed out. As primitive chronic pneumonitis comes on rather in an insidious manner, it is necessary for us to be watchful over those little rheums, those slight temporary coughs, which announce the commencement of irritation, and which in many instances might, by proper care and attention, be prevented from terminating in chronic pneumonitis.

And even among the predisposed, the removal of the occasional causes should be considered of primary importance. It is necessary that those, who are constitutionally predisposed, should be very abstemious and temperate in their mode of living; they should also avoid the vicissitudes of heat and cold, singing, hollowing, declamation, stimulating food and drinks, &c. and if these individuals should have a cough, pains in the back, sternum, slight fever, &c., they should be put upon a severe diet; and these irritations should be removed, by general and topical bleeding, and attention to the regular maintenance of the perspiratory function. And for this purpose, the patient should be directed to wear flannel next his skin, to protect himself with proper clothing against the influence of low temperature, and to avoid, as much as his circumstances will allow, the effects of sudden vicissitudes.

Bleeding is highly recommended by some, in the early stage of this disease; and when properly regulated by a sound discriminating judgment, it may be serviceable; but we believe the abstraction of blood

by cupping and leeching will in general answer all the purposes, which can be anticipated from these means.

We have never found, in our practice, that the abstraction of much blood, in this disease, affected a permanent reduction of the quickness, tension and frequency, of the pulse. The system is prematurely excitable, and in order to bring the excitement to a proper equilibrium, measures must be employed, which tend to subdue this morbid irritability; and for this purpose, digitalis, and small doses of tartarized antimony, are highly recommended. Dr. Beddoes, in his essay on consumption, speaks in tones of the highest confidence of the remedy. Dr. Mossmon also says, "I have prescribed the digitalis very extensively, for upwards of twelve months; and during the last six of that period, I have had very ample experience of its powers: and I am now fully persuaded, that by a judicious management of the plant variously combined, I can obviate pneumonic inflammations, with as much certainty, as to arrest the progress of intermittent fever with the bark." Saunders also speaks favourably of it. (See Saunders on consumption;) also, Dr. Drake, Dr. Fowler, Dr. Eberly, and others.—(See Dr. Mossman's Essay on glandular consumption; also, Medical and Physical Journal, vol. 26, page 418.)

Amidst the variety of opinion, with respect to this article in consumption, our own experience and observation have led us to the conclusion, that under care-

ful management, and in conjunction with a well regulated diet, and proper attention to the cuticular function, much good may be derived from its employment, in incipient chronic pneumonitis. Blisters, setons and issues, are valuable auxiliaries in primitive consumption : They should never be omitted.

The insertion of caustic issues, and setons, have been frequently known to remove symptoms of approaching consumption ; and even in cases completely developed, counter irritation will aid very much in staying the progress of the malady. Pustulation with tartar emetic ointment, is also a very efficient agent of counter irritation in this affection.

We have known much benefit to be derived from this application ; but it is indispensably necessary, that it should be persevered in, until it has been fairly tried : and this should be the case with respect to all the counter irritating applications.

Tartar emetic, as an auxiliary to the use of flannel next the skin, has been highly spoken of by different writers. M. Luthon speaks strongly in favour of this remedy. Dr. Margate gave the sulphate of copper and tartarized antimony, as an emetic, twice a week. Dr. Armstrong directs the use of this remedy, in doses sufficiently large to excite nausea and vomiting.—Unquestionably, however, the most efficient of all measures for counteracting the tendency to chronic pneumonitis, or arresting its developement and progress, is a removal to, and residence in a mild, genial, uniform, and salubrious clime ; aided by proper

diet, regular and moderate exercise, and sometimes even amounting to vigorous exertion.

External revulsives, with an attention to the hepatic and intestinal functions, will perhaps do all that remediate measures are capable of, in arresting permanently, the developement and progress of the disease.

We would mention that chronic pneumonitis, depending on the occupation and mode of life, requires that the antiphlogistic treatment should vary, according to the extent of the inflammation, the temperature of system, the mode of life, and the activity of the irritating causes. Thus, the vigorous and energetic fencing master should be reduced more promptly and boldly, than the sedentary workman, who inhales particles of wool mixed with dust, and vapours of dyes, in a confined manufactory. A robust and muscular man, who has wasted away, and contracted a pulmonary irritation by breathing the heated vapours of a furnace, foundry or forge, will derive great benefit from milk, mild farinaceous diet, mucilaginous drinks; from bathes, emollient fomentations, &c ; whilst the man of letters, whose lungs have become engorged in his cabinet, under the influence of a nervous erythism, and small delicate hysterical women, ought to use antiphlogistics sparingly. They will require the use of antispasmodics, expectorants, sudorifics, revulsives, or counter irritants.

The chemist, the metallurgist, who inhales mineral acids, metallic oxides, and gases ; plasterers and

stone-cutters, whose lungs are filled with the vapours formed by foreign bodies ; will be inconvenienced by every irritation, which will be too actively repeated in the pulmonary tissue.

Thus vesications, rubefacients, and cauterizations of the chest, which would be of advantage to the pale, ill formed shoemaker, and to the lymphatic female, who leads an inactive life behind a counter or at the mantua-making board, would not benefit them as much as cataplasms, emollient fomentations, tepid baths, &c. Those, who by their profession are exposed to the impression of an irritating vapour, and to suppressed transpiration, such as bakers, will frequently receive more advantage, after the first period of general respiration.

The climates of Naples, Florence, Nice, France, Rome, Pisa, and Spain, have all been particularly recommended. Dr. Parish thinks that none of the places which have hitherto engaged the particular notice of the profession, combines more advantages than the interior of Georgia, and Florida. See the case of Dr. Baldwin, related in the North American Med. and Phys. Journal, No. xvi, page 281. This case illustrates the favorable influence in this district of country, accompanied by the personal exertions of the patient himself. (See Clarke on the influence of climate on diseases of the pulmonary apparatus.) Indeed it is certain, from the experience of the past and present age, that a warm climate is advantageous, by the facilities which it affords to constant exercise in the open

air. It is certainly not from the equability of the temperature alone, that good results ; for individuals, who are confined during the winter in rooms, the heat of which is regulated by a thermometer, are seldom found upon the return of warm weather, to leave their chamber improved. Continued exercise is essential to the favorable operation of a warm or temperate climate. (See Duncan on Consumption.) In choosing a place of residence, the patient should always avoid situations contiguous to the sea : as the salt air from the ocean, blowing over the land, according to the almost universal experience of practitioners in the country, is highly irritative and injurious to the lungs affected with tuberculous disease. We would only recommend, from the experience of all ages, a change of climate in the primitive stage of the disease. When the disease has deeply fixed itself on the lungs, and disorganization has taken place, it is vain to expect any material advantage from this or any other remedy. Practitioners have often committed fatal errors, by recommending their patients to take long voyages, when there was no reasonable prospect of advantage : it is certainly much better, and more agreeable to die at home, than in a land of strangers. Long voyages in warm or temperate latitudes, have frequently been productive of great advantage in the commencement of the disease ; or if they cannot leave home, let them attend to energetic exercises, perseveringly continued, in their own neighborhood. There are a few considerations connected with the subject of consumption,

not yet mentioned, and highly deserving of attention. One of the most prominent is, the natural influence of the pulmonary disease and the uterine functions, over each other. It is an almost universal rule, that in the latter stages of confirmed consumption, the catamenia is suppressed ; and their absence may always be regarded as an unfavorable circumstance. A certain eminent writer says, “so long as the uterine action is healthy, the prospects of the patient are by no means desperate ; it is therefore an object which should always engage the anxious care of the practitioner, to favour the uterine system in the struggle, and to do whatever may lie in his power to promote its healthy operation.

When the disease is once completely formed, and purulent expectoration, with hectic fever, has supervened, we can no longer hope to procure a favorable issue by remediate measures ; and all our efforts must be directed to the palliative treatment. With the exception of depletion, the remedies already mentioned as most apt to arrest the primitive state, are also among the most useful means in retarding its progress when fully established. When the system is much exhausted, tonics are necessary, with a more nourishing diet. To check the profuse night sweats, the acetate of lead is highly spoken of : it is best to give it in union with opium. Some of the mineral acids are also recommended for this purpose ; for instance, diluted sulphuric acid. Opium is a highly valuable paliative, in the advanced stage of chronic pneumonitis ; it may

with propriety be designated the “optimum donum Dei :” it allays the violence and frequency of the cough, diminishes the night sweats, alleviates the feelings of distress, illness, and discomfort, finally assuages the pangs of approaching dissolution. The lactucarium, black drop, and hyoscyama, when opium disagrees with the patient from idiosyncrasy, may be substituted. Dr. Boame, Professor of the practice of physic in the University of Oxford, speaks strongly in favor of the employment of uva ursi, in consumption. He asserts that he cured nine cases out of sixteen, by the use of ten grains of uva ursi with one third of a grain of opium, three times daily ; but it is probable that they were cases of chronic bronchitis.

Expectorants are useful to relieve the cough : flaxseed tea, decoctions of the lichen islandicus, solutions of gum Arabic ; infusions of tussilago, of marshmallows ; elix. paretoric, with compound syrup of squills ; tr. tolu, with syrup of poppies ; opium, with tartar emetic, &c. The inhalation of the fumes of tar, together with medicated inhalations, such as iodyne, diluted chlorine, with various vapours, recommended by Murray, member of the royal college of surgeons, and of the royal medical society of Edinburg.

We shall now demonstrate the superior efficacy of regimen and exercise, in the affection, by the relation of some cases. Choid, twenty-one years of age, brown hair, large and muscular, during his march to rejoin his corps, in the month of February, 1807, was seized with a cold, which, in a short time, was accompanied

with pain, fixed and severe in the chest, with frequent cough. He continued sixty days in this situation, which was constantly getting worse ; when he was placed under the care of an eminent French physician the 3d. of June, about four months after the attack. He was then affected with constant cough, very profuse white puriform expectoration, considerable dyspnoea, hot and dry skin, pulse frequent, strong, and expanded, pain in the thorax, anxiety, yellow paleness of complexion, sharpness of the features. In this situation, venesection was performed ; afterwards leeching, to the thoracic parietes ; the parts were afterwards covered with a large cataplasm ; total abstinence from food, mucilaginous fluids, decoctions of rice slightly acidulated. About the eighth of June he began to get better ; gruel and broth were the only nourishment then allowed ; the mucilages were still continued, also, the cataplasms, from which the patient found great relief : Ninth of June, in consequence of imprudent conduct, his cough increased : fresh precautions were given him, his appetite began to return ; no increase of food allowed. June the tenth, still better. The fourteenth, complexion becoming natural, strength increased, great appetite, no cough, gradual increase of food. Sixteenth, perfect health ; and on the 22d. he left the hospital completely well.

This case displays the approach of the disease to a state of disorganization ; but which was arrested in its progress, principally by a rigid perseverance in regimen. The following notice, handed to Dr. Parish of

Philadelphia, by Dr. Gilmer, was drawn up by a gentleman in Ohio, the father of the doctor, and dated Marietta, 1823.

“In the year 1804, Thaddeus M. Harris, a clergyman of Massachusetts, called at my house in Marietta, and from him I received the following account:—He had left Dorchester, Massachusetts that spring, so low in consumption, that neither he nor any of his friends tho’t he would be able to reach Hartford, Connecticut, distant one hundred miles. He arrived there, however though still very weak, he was encouraged to prosecute his journey to New York : when there, finding that he was gaining strength, he concluded to proceed to the western country. On his arrival at Marietta, he was so well as to be able to ride forty miles a day to preach ; and was in fact quite recovered. He returned to his parish, Dorchester ; and the last time I heard from him, which was about twenty years since, he was in good health.

The following case is related by Dr. Parish of Philadelphia.—“A gentleman in Philadelphia, a young man, came under my care during the winter season, affected with cough and hectic fever. In compliance with my advice, he rode daily through the winter ; and in the spring was evidently better. The summer opened upon him, still affected with alarming symptoms. It was during the late war : the young man joined one of the volunteer companies, marched with the rest, and was subject to all the hardships of a camp-life ; his health and strength increased, and he

became hearty, and free from all signs of pulmonary disorder. (Sec North American Med. and Surgical Journal.

Many other cases might be mentioned, which would go to reveal the superior efficacy of regimen and exercise. But considering what is already related sufficient, we will merely mention a striking and similar case, which occurred in our own practice.

In the summer of 1827, I visited a young man affected with chills, fever, pain in the breast, cough and symptoms of consumption. These symptoms presented a gloomy prospect. In consultation with a respectable physician, the case was regarded as hopeless; he however so far recovered as to be able to take a tour to the west. Some time since I received a letter from him, stating that he had perfectly recovered in health and spirits.

The treatment of acute carditis, or pericarditis requires more promptitude and energy of decision, than any other thoracic inflammation. The derangement of the vascular system, the alarming syncopes, and the perplexing anomalous symptoms, which so often attend inflammation of the heart, are sufficient to embarrass the old, and completely puzzle the young practitioner.

But he must be watchful, and allow no time to be lost. General bloodletting, therefore, shall be carried to the greatest extent compatible with the life of the patient; while topical bleeding over the region of the heart, by cupping and leeching ought not to be omitted.

The local bleeding should be more than usually abundant : not less than thirty or forty leeches should be applied, or sixteen ounces of blood abstracted by cupping from the region of the heart. The bowels should be kept open by purgatives ; and, in the mean time, he should be placed in a horizontal situation, or lying on a bed or sofa, and instructed not to move a single voluntary muscle, if he can avoid it.

Next to these means, our great dependence must be on counter irritation, digitalis, antimony, &c.—After the topical depletion, a large vesicatory should be applied over the region of the heart : we should then endeavour to allay the irritability and inordinate action of the heart ; and, for this purpose, there is no combination so powerful as digitalis, antimony, and hyoscyamus. Equal parts of the Tr. digitalis, antimonial wine, and hyoscyamus tincture, should be exhibited ; beginning with fifteen or twenty drops every four or six hours, and gradually increasing the dose, till evident proofs of constitutional affection are produced. These means, with a dose of calomel every night, combined occasionally with opium, will reduce cardiac inflammation, if any thing will ; and should they be inefficient, when energetically employed, the great probability is, that no other means will succeed.

organic diseases of the heart, whether active or passive, are more or less of a lingering or chronic nature. In their treatment, as a cure is seldom attainable, our chief exertions must be palliative ; and if

passive, arrest or at least protract, the progress of the disease. The grand and fundamental indication, in organic diseases of the heart, is to facilitate the circulation of the blood : it is the incapacity of the heart to keep up a regular and proper circulation, that is the source of all the morbid phenomena, and sufferings of the patient. The dropsical effusions, in the cellular tissue of the lower extremities, and the different cavities of the chest or abdomen ; together with the purple line of the lips and face, the difficulty of breathing, and cough ; and particularly that of defective circulation in the lungs, go strongly to prove the declaration.

Now, as exercise tends to accelerate the motion of venous blood towards the heart, so quietude is absolutely necessary, in the treatment of those cases, with rest and perfect composure. There is no chance of impeding, and especially of arresting, the progress of the disease, without it. We may as well expect to cure external inflammation, by the continual action of the sun's rays upon it ; as to mitigate, and much less to remove, organic affections of the heart, as long as corporal labour is continued. It is in consequence of this, that this class of diseases proves speedily fatal to the lower orders of society, who cannot procure the indulgence of rest.

From cases related by that accurate Laennec, and from the observations of Testa, Corvisart, Johnson, and Piorry, there is reason to believe, that active enlargement of the heart may be actually cured, by a

rigid and long continuance in the means hereafter to be pointed out. It is at all events certain, that in a vast majority of instances, life may be greatly prolonged, and rendered comparatively comfortable, by a proper regulation of regimen, and adoption of the remedies prescribed.

In these affections, if the patient be at all robust, plethoric, or flushed in the countenance, with difficult respiration, strong, hard, or full pulse, venesection must be practised ; and repeated according to the urgency of the symptoms, until the turgid vessels are relieved. These bleedings, however, should be small : as there is some danger in too sudden a reduction of the vital energies of the system. In functional or organic affections of the heart, there is a more considerable tendency to congestions of blood in the abdominal viscera, and portal circle, than those of the stomach, or intestinal functions ; the latter after preserving their regularity to a great degree, when the most serious lesion is going on in the heart. In cardiac diseases, there is constant danger of some other organ or tissue in the body becoming diseased, from the violent action of the heart, and impetuous propulsion of the blood through the vessels.

It has been shown, how diseases of the heart tend to apoplexy : therefore, it is indispensably necessary to watch the various organs of the body, during this morbid state of circulation ; and guard them when threatened, by general or local detraction of blood, low diet, intestinal evacuation, and counter irritation. A cer-

tain distinguished writer, says, in aneurism of the heart, "I am persuaded, that many cures might be effected by a rigid system of blood-letting, quiescence, and starvation, persevered in. In every organic affection of the heart, (with the exception of single passive dilatation, which is comparatively rare,) there must be some degree of inflammation, at least irritation, existing in that organ. This is evident from the symptoms during life, and post mortem examination : hence the necessity of removing this irritation, or subduing the inflammation. Local blood-letting, in the neighborhood of the heart, is requisite ; while counter irritation should be established, by blisters, setons and issues. In order to remove the morbid irritability of the heart, in this class of disorders, we will derive benefit from the use of opium, digitalis, hyoscyamus, and other narcotic preparations, when properly administered ; and particularly in combination with aperients, antacids, or aromatics, and alkaline absorbents. When the disease has arisen from a repelled eruption, or a suppressed constitutional discharge, we ought by all means, and as soon as possible, produce the original affections. When dropsical swellings display themselves, in different parts of the body, the case is dangerous, but not entirely desperate : life may still be protracted, and the progress of the disease arrested, by proper means. It has been satisfactorily proven by modern practitioners, that these infiltrations are the effects of inflammatory action, progressing in the abdomen or chest, in consequence of diseases of the

heart; and they cannot be prevented from recurring, but by the removal of their primary cause. Consequently, we should practice general and local blood-letting. For the temporary removal of those serous collections, we must resort to diuretics, and alterative aperients. One of the most powerful diuretics, and the most successful in these cases, is the following :

R.	Tartaric Acid	1	scruple
	Carbonate of Soda	25	grains
	Spts. Nitric Ether	1½	drachms
	Infusion of Digitalis	3	drachms to 6
	Mint-water	1	ounce

Mix for a draught.

To be taken twice or thrice in a day.

With the above medicine, the following pills may be given every night :

B.	Blue Mass	3 to 5	grains
	Aloes Soccotarine	1	grain
	Pulverized Squills	1	grain
	Oil of Cassia	2	drops

Mix. Make pills 2, to be taken at a dose.

The above prescription will answer well to reduce dropsical swelling, with perhaps some addition; and the re-establishment of them must be obviated, by the means pointed out, and whatever the circumstances of the case requires.

We will now mention two cases of diseases of the heart from metatassis ; and then conclude our remarks.

Case 1st. (See Johnson on the liver.) A gentleman aged about twenty years, subject to rheumatism, felt on the morning after a dance, a slight pain in the shoulders, and suddenly all the symptoms of matastasis upon the heart, dyspnœa, palpitation, frequent syncope, extreme distress. Venesection, blisters, sinapisms, employed from the beginning, and frequently repeated ; restlessness during twelve days extreme ; —symptoms from that time gradually subsiding, entirely removed in two months.—The next case occurred in our own practice.

A lady aged about 30, was seized in the spring of 1828, with acute rheumatism ; the limbs were severely pained, and swelled, during the first eight or ten days, then gradually abated. On the eighteenth day, she complained of severe pain under the left breast, extending across the sternum, accompanied with other symptoms : great distress, mental anguish, dyspnœa, palpitation of the heart ; pulse wiry, frequent, and irregular. Venesection repeatedly performed, cupping, blistering, digitalis, Dover's powders, &c. About two weeks from the invasion of these symptoms, the patient was able to rise from her bed, and sit up during part of the day. Palpitation and difficulty of breathing, still continued ; these symptoms were removed by digitalis and nitre. A relapse occurred, about the last of August. The former remedies, and tepid bath, used

successfully ; convalescence slow ; recovery entire, about the first of October.

Members of the Union Medical Society—We are now done our essay ; and this we would honestly declare :—that it has occupied a great deal of our time and attention. We have been careful in arranging our plans ; adopting those which we believed to be most scientific, plain, and useful. We have been particular in searching after information, from the most approved, and best authority, now before the world.—We have studied to embrace every thing, that we considered important and necessary, from distinguished writers, as well as from our own theoretical, and practical information. In a word, we have been arduously engaged in endeavouring to give instruction, for discerning, distinguishing, preventing and curing, the diseases which are the subject of this essay. And, should we be so fortunate as, in your respective estimation, to prove successful in accomplishing the design of our enterprize—be assured, it shall be duly appreciated, and gratefully acknowledged.

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